A COMPARISON STUDY OF SELF-CONCEPT AND SELF-ESTEEM IN NORMAL ADOLESCENTS AND ADOLESCENTS WITH END-STAGE RENAL DISEASE BEING TREATED BY MEANS OF KIDNEY TRANSPLANTATION OR CHRONIC DIALYSIS

By

Kristine Ann Nelson, R.N., B.S.N.

A Thesis

Presented to
The Oregon Health Sciences University
School of Nursing
in partial fulfillment
of the requirements for the degree of
Master of Nursing

June 10, 1983

APPROVED:

[redacted]

Charold Baer, R.N., Ph.D., Professor, Thesis Advisor

[redacted]

Doris Julian, R.N., M.N., Associate Professor, First Reader

[redacted]

Marsha Heims, R.N., M.S., Asst. Professor, Second Reader

[redacted] School of Nursing

ACKNOWLEDGEMENTS

Special appreciation is extended to my husband, Randy, for his love, patience and understanding and to Connie and Patty for their support. The writer also wishes to express sincere gratitude to Dr. Charold Baer, Doris Julian, Marsha Heims and Dr. Y. B. Talwalkar for their invaluable guidance and encouragement throughout the process of this endeavor.

k.a.n.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1

Introduction

This study was concerned with the effects of chronic illness on the self-concept and self-esteem of the adolescent. The presence of a chronic illness or a disabling condition is thought to have a major impact on the adolescent's physical and emotional characteristics and development. It is estimated that 7% to 10% of all children are afflicted with a serious chronic illness (Jennison, 1976). The increasing incidence of children (including adolescents) with chronic illness, due primarily to recent technologic and medical advances that prolong life (Steel, 1977), emphasizes the need for further study of the health care needs of this population.

The specific chronic illness to be explored in this study is kidney failure that has reached the final phase of end-stage renal disease (ESRD). An individual with ESRD requires definitive treatment in the form of kidney transplantation or dialysis to maintain life. Since there is no "cure" for ESRD, adolescents that have reached this stage of kidney failure will continue to be chronically ill for the rest of their lives. In addition to this basically stable population, it is estimated that two children per million population in the United States per year will be newly diagnosed with end-stage renal disease requiring definitive therapy (Lawson, Murphy & Talwalkar, 1976). Thus, as the general population increases, so will the number of children and adolescents with end-stage renal disease.

End-stage renal disease is a severe, life-threatening chronic illness

that affects all aspects of the individual's life. Kidney failure produces a number of physiological abnormalities including electrolyte and water imbalances, hypertension, anemia, acidosis, and uremia (Lewy & Hurley, 1976). These abnormalities result in symptoms of fatigue, pallor, anorexia, vomiting, edema, weakness, and headaches that alter both physical appearance and functioning. Children with ESRD suffer from growth failure caused, in part, from the above-mentioned conditions as well as from poor nutrition and bone disease (renal osteodystrophy that results from disturbances in calcium and phosphorus metabolism) (Moel, 1978).

The available treatment options for ESRD (i.e., renal transplant or dialysis) have many limitations. Renal transplantation involves the surgical placement of a donated kidney (from a cadaver or living, related donor) into the body of the recipient in order to restore the individual to a state of near-normal kidney function. The chief post-transplant problem is rejection of the "foreign kidney" by the recipient's immune system, resulting in a partial or complete loss of kidney function. Individuals receiving kidney transplants must follow a strict therapeutic regimen using immunosuppressive agents in order to delay the rejection process and thus maintain kidney function. This treatment produces many side effects that alter physical appearance, delay physical maturation and suppress growth. The function of the transplanted kidney must be closely monitored through frequent clinic visits and laboratory tests which force the individual to be closely linked to the health care system and health care professionals.

Hemodialysis is a process by which toxic waste-products, and

excess fluids and electrolytes are removed from individuals with kidney failure by filtering their blood through the membranes of a coil located in a "kidney machine." This process requires connection of the patient's blood vessels to the machine through a surgically created "access" site. It is usually performed three days per week for approximately four hours each day. Peritoneal dialysis serves the same purpose as hemodialysis, but the process differs. A catheter is placed through the patient's abdominal wall and into the peritoneal cavity. Fluid is exchanged hourly through the catheter thereby filtering out waste products from the blood vessels that line the cavity. This process may be performed using a manual technique or with the patient connected to a machine. It is done three times a week for a total of 36 hours. Continuous ambulatory peritoneal dialysis (CAPD) functions according to the same principles as the peritoneal dialysis described above. However, no machine is involved and the fluid is manually exchanged every four to eight hours each day, seven days a week.

Individuals on chronic dialysis therapy continue to have many of the symptoms of kidney failure previously noted, as well as additional problems created by the dialysis process itself. Hemodialysis has been reported to be unsuccessful in restoring the patient's appetite, good health, and general feeling of well-being despite apparently adequate biochemical control (Edelmann & Barnett, 1971). Rapid fluid and electrolyte shifts and severe anemia often occur with hemodialysis. The vascular access used for hemodialysis can stop working properly, requiring surgical intervention to repair the access or to create a new access site. This results in pain, temporary functional impair-

ment of the extremity involved and marked scarring.

Frequently seen complications with peritoneal dialysis include serious abdominal cavity infections (peritonitis) and massive protein losses in the peritoneal exchange fluid that result in a poor nutritional state (Williams, Klenk, & Winters, 1973). In both types of dialysis, a portion of the patient's body must be connected to a machine or tubing set-up for prolonged time periods. Individuals on dialysis require close monitoring and assistance by health care professionals.

Adolescence is a time of rapid change and growth. The adolescent experiences normal physical, physiological, and psychological maturation changes that require adjustments in body image and self-concept. The adolescent must accommodate and accept these normal changes in order to achieve a positive view of the self. End-stage renal disease and the side effects of treatment interrupt and abruptly alter normal adolescent development. Together they impair physical functioning, force dependency on the health care system and health care professionals, produce anxiety, and cause social isolation. Thus, disorders of self-concept and self-esteem can be anticipated for the adolescent with end-stage renal disease being treated by kidney transplant or chronic dialysis.

There are many unanswered questions related to this self-concept and self-esteem problem. What are the relationships between self-concept, self-esteem, adolescent development, body image, and chronic illness? Can an adolescent's self-concept and self-esteem be accurately measured? In what ways and to what degrees does ESRD and the

side effects of treatment alter self-concept and self-esteem in adolescents? Can disorders in self-concept and self-esteem be assessed with currently available assessment instruments? In what ways can the assessment of self-concept and self-esteem guide health care personnel and particularly nurses in planning and implementing interventions for adolescents with ESRD and other chronic illnesses?

Additional study is needed to provide a solid base of knowledge about the nature of the relationships between chronic illness and the self-concept and self-esteem of the adolescent. Also, assessment tools that are designed to measure self-concept and self-esteem in adolescents need to be evaluated for reliability. It was the aim of this study to add to the general knowledge about self-concept and self-esteem in adolescents with chronic illness and to explore the usefulness of two instruments, the Coopersmith Self-Esteem Inventory and the Piers-Harris Self-Concept Scale, in measuring these attributes for this particular population.

Health care personnel, and especially nurses, work closely with adolescents who have chronic illnesses, including ESRD, because of these adolescents' dependency on the health care delivery system. Nurses can utilize the information derived from this study and others like it to become more knowledgeable about the possible relationships between chronic illness in an adolescent and the formation of self-esteem and self-concept by the adolescent. Once aware of these relationships, nurses, employing the nursing process, can obtain appropriate subjective and objective data to assess self-concept and self-esteem in chronically ill adolescents. Objective data gathering tools such as

the Coopersmith Self-Esteem Inventory and the Piers-Harris Self-Concept Scale can potentially be used by nurses in this assessment process. However, more studies similar to this one must be conducted so that nurses become aware of these assessment tools, are given information on their proper administration and interpretation, and are provided with reliability data indicating the value of such tools for measuring self-concept and self-esteem.

Nurses, in applying the knowledge gained, can perform accurate, complete assessments of a chronically ill adolescent's self-concept and self-esteem and identify potential or existing problems. If a negative self-concept and/or self-esteem is documented, nurses can generate a specific nursing diagnosis and design an individualized plan of care aimed at helping the chronically ill adolescent improve his/her self-concept and self-esteem. Implementation and evaluation of the plan of care will also be guided by the nurse's knowledge of chronic illness and its relationship to self-concept and self-esteem in adolescents.

Review of the Literature

The Effects of Chronic Illness on Adolescent Self-Concept and Self-Esteem

Chronic illness has a major influence on normal growth and development and can inhibit the adolescent's progress through the maturation process (Wolfish & McLean, 1974; Mattson, 1972). Jelneck (1977) and Waechter (1979) provide general discussions on how the presence of a disease interferes with the adolescent's ability to accomplish the following normal developmental tasks: accepting the physical self,

achieving independence, finding a personal identity, and attaining social maturity.

The first task, physical self-acceptance and body image formation, is especially difficult for the chronically ill adolescent who has changes in physical characteristics, level of functioning and/or appearance. Wolfish and McLean (1974) point out that an adolescent who appears different from others in his or her peer group, experiences marked anxiety over his/her body image. Watson and Johnson (1958) indicated in their study of physically disfigured children, that, when there is a change in body structure, the individual must revise his body image to integrate that change, and this process tends to produce severe anxiety in a person who has a pre-existing, indefinite body image. Not only do chronically adolescents have an indefinite body image, but even healthy adolescents have this perception of body image due to the normal body changes that occur with physical growth and sexual maturation (Waechter, 1979; Jelneck, 1977; Clifford, 1971). Secord and Jourard's (1953) studies of body cathexis (the degree of satisfaction one feels for one's own body) indicated that negative feelings about one's body are also associated with anxiety and a resultant overconcern with pain, disease and bodily injury. This is further substantiated by Schwab and Harmeling's (1968) work with 124 adult patients whose negative feelings toward the parts of their bodies affected by their illness resulted in a general overall negative image of their bodies that correlated with emotional distress. Secord and Jourard's (1953) studies have further shown that feelings about one's body are commensurate with feelings about one's self and that a negative

body image is associated with feelings of insecurity about the self as a whole.

Reaching total independence is another key task to be fully accomplished by the end of adolescence. Forced dependency on parents, siblings, nurses, physicians, and others because of the physical and psychosocial restrictions imposed by the chronic illness and the treatment regimen, inhibits the adolescent's move toward independence, and can lead to feelings of helplessness, anger and confusion (Jelneck, 1977). An intense struggle often occurs between the adolescent's need to be dependent and his or her desire for independence. This conflict can result in rebellion against medical treatment and denial of the illness (Waechter, 1979; Steinhauer, et al., 1974), and stems from the individual's need to be in control. As Rubin (1968) states, the ability to function at all times and in all places with complete control is held in personal, social, and cultural esteem. The fear of losing, and the actual loss of control that occurs with the chronically ill individual results in a loss of self-respect that adversely affects the individual's body image and self-esteem (Rubin, 1968; Udelman, 1979).

Establishing a sense of identity, an integrated self-concept and a personal value system is a third important focus for the adolescent. The forced isolation imposed by chronic illness acts to estrange the adolescent from his or her peer group, thus retarding his or her identity development, which is partially built on the mirror image reflections of others (Waechter, 1979). Meissner's (1967) study of 193 females and 189 males in junior and senior high school with physical disabilities indicated that the self-concept of these adolescents was

related to the impact and the obviousness of the physical disability. Physical attributes such as beauty, strength, energy, and endurance are the major contributors to the adolescent's self-concept, which is a composite of the attitudes the adolescent has toward his or her mental and physical self. This study specifically indicated that, for females, the greater the impact the disability had on the adolescent's self-identity and image, the more negative self-statements were made. Males with high-impact disabilities were cited as making positive self-statements, and appeared to use denial as a coping mechanism for their disability. For the late adolescent, chronic illness threatens all the goals the adolescent would normally want to achieve in order to attain self-sufficiency, consolidation of identity, total responsibility for one's life, and career stability (Waechter, 1979; Anyan, 1978).

The final development task--social maturity and the development of good interpersonal relationships--is affected by chronic disease due to the physical and social isolation that occurs in the case of the chronically ill adolescent (Wolfish & McLean, 1974; Waechter, 1979). Frequently, these adolescents are unable to attend school, which is the primary site for social interaction (Steinhauer, et al., 1974). Peer relationships are often dissolved when an adolescent becomes ill, due to rejection by his or her healthy friends who feel threatened by recognizing the limitations of others (Waechter, 1979). For the adolescent who is seeking to establish a sexual identity and intimate relationships, being attractive to members of the opposite sex is crucial. Attractiveness is often decreased by a chronic illness that causes physical deformities and delayed sexual maturity (Frauman & Sypert, 1979).

The adolescent feels inadequate as a sexual human being. This, coupled with peer rejection, is devastating to the adolescent's self-concept and results in a very low self-esteem (Waechter, 1979).

The Effects of Kidney Transplantation on Adolescent Self-Concept and Self-Esteem

Since the 1970's, kidney transplants have been used successfully for individuals of all ages with end-stage renal disease (ESRD) (Fine, et al., 1979; Boulton-Jones, et al., 1971; Gonzalez, et al., 1970; Lawson, et al., 1976; Advisory Committee to Renal Transplant Registry, 1972). It must be emphasized that renal transplantation is a treatment modality for ESRD and not a "cure." The individual with a kidney transplant must adhere to a strict medical regime of daily medications, dietary control, physical activity limitations, and frequent clinic visits and blood tests. Present, too, is the constant threat of complications occurring; the most common of these being rejection of the transplanted kidney, resulting in cessation of its function.

The adolescent who receives a renal transplant may have a long history of chronic illness, thus having pre-existing disturbances in body image and self-concept. Studies have documented that adolescents who have had chronic renal insufficiency or have had ESRD requiring dialysis for a prolonged time are delayed in physical growth and sexual maturation (Ferracis, et al., 1980; Stickler, 1976). An individual with a renal transplant is required to take daily (or every other day) corticosteroids (prednisone) and other immunosuppressive agents to prevent rejection of the transplanted kidney. Prolonged use of corticosteroids has been shown to produce the following side effects in transplant

patients: Cushinoid facial features ("moon" face), severe acne, polyphagia, obesity, hirsutism, cataracts, and bone disease (Malekzadeh, et al., 1976). Linear growth post-transplant has been reported in a few adolescents, but usually, adolescents suffer linear growth suppression from steroids and maintain a short stature in comparison to healthy adolescents (Fine, et al., 1978; Scharer, et al., 1976). In addition, the transplant surgery produces incisional scars that, combined with the other impairments to physical appearance, can be detrimental to the adolescent body image (Gilman & Frauman, 1979).

The majority of studies done have indicated that adolescents with renal transplants have a negative body image that results in a poor self-concept and low self-esteem. Lawson (1976), in a report of 24 Oregon pediatric transplant patients (including 13 adolescents), stated that short stature and delayed sexual maturation was an impediment to psychological adjustment. However, Pang's (1975) study on the same adolescent groups suggested that assessments of body image and self-esteem in transplant patients closely resembled the normal control group.

Grushkin (1973) contends that self-esteem is severely damaged in adolescents with kidney disease as a result of an unattractive external appearance, delayed development, and subnormal growth. This is substantiated by Korsch's (1973) study of 35 children, ages 1½ to 20 years. The Piers-Harris self-concept scale was used and results indicated that the transplant patients had severe damage to their self-concept in comparison to the normal control group. This study was extended by Fine (1978) with a total number of 100 transplant patients

indicating the same results. Another study using interviews as the data collection method was done with 18 patients, ages 11 to 26 years (Poznanski, et al., 1978), and indicated that most transplant patients had depressive feelings, negative self-image and difficulties forming relationships, particularly with members of the opposite sex.

The Effects of Chronic Dialysis on Adolescent Self-Concept and Self-Esteem

Studies of the psychosocial effects of chronic dialysis on adolescents indicate similar findings to those done with adolescents with kidney transplants. Hemodialysis is fraught with specific insults to the adolescent's body image that include scarring from vascular access placements, pallor from anemia, short stature, and thinness (Gilman & Frauman, 1973; Scharer, 1976). Hemodialysis has been shown to be a very stressful experience that evokes the fear of pain, mutilation and loss of body intactness (Bernstein, 1970). It also has been shown to increase the conflict between dependence and independence for the adolescent because the patient is forced to: 1) depend on a machine to maintain life; and 2) adhere to very rigid dietary restrictions (Kaplan De-Nour, 1979; Magrab & Papadopoulou, 1978). Kaplan De-Nour (1979) conducted extensive interviews with 18 adolescents on hemodialysis. She stated that these adolescents complained about their appearance (especially the pale-yellow tinge of their skin), had body image problems, and seemed very isolated and alienated from their peer group. They also engaged in few social activities.

There is little information available in regard to the psychosocial effects of chronic peritoneal dialysis and Continuous Ambulatory Peritoneal

Dialysis (CAPD). Chronic peritoneal dialysis has been used successfully to treat adolescents with ESRD. The reports of Day and White (1976) and Hickman (1978) indicate possible areas for body image and self-esteem problems that include the continued presence of a percutaneous peritoneal dialysis catheter, scarring from surgical placement of this catheter, chronic malnutrition resulting in short stature, poor weight gain and pallor from anemia.

Experience with adolescents in CAPD is even more limited with only three groups reporting data (Alexander, et al., 1981; Balfe, et al., 1981; Shmerling, et al., 1981). A study of 161 CAPD patients, 18 years of age and older, using the Basic Personality Inventory as the assessment instrument indicated that CAPD patients demonstrate a higher degree of depression, denial and self-depreciation in comparison to the general public (Burton, et al., 1981). Another author has reported that patients on CAPD have an improved quality of life without severe dietary restrictions and dependence on a "machine" (Sorrels, 1981). Sorrels stated that the CAPD patient can conceal the peritoneal catheter and bag sufficiently to maintain a positive self-image and become indistinguishable from normal people. Shmerling (1981) reported that only one out of seven patients (ages 6 to 18 years) expressed concern over being stigmatized by his peers because of the peritoneal catheter protruding from his abdomen, but all patients were displeased about the external catheter. Other patients indicated that CAPD's greatest advantage was that it provided them with freedom of movement and the ability to manage their own therapy. Two other groups have reported teaching adolescents to manage their own CAPD program thus positively influencing their self-concept (Maksym Nelson, et al., 1980; Balfe, et al., 1981).

Renal transplantation and chronic dialysis appear to have a significant negative effect on the adolescent's body image and level of functioning. These factors prevent successful accomplishment of normal adolescent developmental tasks by the adolescent with end-stage renal disease.

Theoretical Framework

Self-Theory: Self-Concept and Self-Esteem

The evolution of self-theory began early in the history of American psychology with interest in the self expressed in the writings of William James (1890), and the introspectionists (Calkins, 1915). Despite a lack of study of the self in the period between 1920 to 1950, a proliferation of self-theorists have been recognized since that time, due to a renewed interest in a modified, psychoanalytic personality approach that stresses the importance of ego development and functioning (Wylie, 1958).

Self-theorists have contributed many definitions for "the self." Coopersmith (1967) defined the self as an "abstraction that an individual develops about the attributes, capacities, objects, and activities which he possesses and pursues." This abstraction is symbolized by "me" and represents the person's idea of himself/herself. Rogers (1951) sees the self-concept or the self-structure as the organized configuration of the perceptions of the self which are part of awareness. Rogers (1951) expands this definition further by stating that "the self is composed of the individual's characteristics and abilities, percepts and concepts of self in relation to others and the environment, and

value qualities, which are perceived as having a positive or negative balance." Brehm and Cohen (1962) regard the self as the object that a person sees himself/herself as being. The self is ideally open to change but is relatively resistant to change because it provides a sense of personal continuity. Jersild (1952) considers the self as a composite of thoughts and feelings, which constitute a person's awareness of one's individual existence and his conception of who and what one is. In other words, a person's self is the sum total of all that one can call one's own. Jersild (1952) also states that the self is both constant and changeable, in that a healthy self assimilates and integrates experiences that are essential, and renounces those that are unessential, strange, or harmful.

Self-concept is defined as the individual's conscious, cognitive perception and evaluation of his/her self (Zahran, 1967). There are two aspects that compose self-concept: the actual self, and the ideal self (Jersild, Brook, & Brook, 1978). The actual self reflects the attitudes one has in relationship to what he/she is really like. The ideal self represents the ideas one has about what he/she would like to be or thinks he/she ought to be. Attitudes of self-rejection and self-acceptance stem from a conflict between the ideal self and the actual self. Jersild (1952) states that self-acceptance is an essential state for good mental health.

Rosenberg (1965) defines self-esteem as a positive or negative attitude toward the self. Wylie (1961) proposes that a favorable self-esteem represents a congruence between the ideal self and the actual self. James (1890) concludes that a person's aspirations and

goals have a major role in determining self-esteem. If a person's achievement approaches or meets his/her goals in a valued area, the result is high self-esteem. However, if there is a large discrepancy between one's achievement and one's goals, then low self-esteem results. High self-esteem can mean that one considers oneself superior to others, but it is usually considered to mean that one posseses an adequate degree of self-acceptance, respects oneself, and considers oneself worthy. Low self-esteem implies self-rejection, and self-dissatisfaction (Rosenberg, 1965). Mead (1934) states that self-esteem is largely derived from the "reflected appraisal of others." Individuals evaluate themselves based on criteria employed by the significant people in their environment.

Adolescent Development and Self-Concept

The goals of adolescent development are outlined by Jersild, et al., (1981), as follows: physical maturity, mental maturity, emotional maturity, finding the self, and emancipation from parents. Each of these developmental tasks requires the adolescent to alter and adjust his or her self-concept to accommodate physical and emotional changes. However, these changes are not discontinuous with those of childhood or adulthood, but rather reveal an emergent personality that has a historical background, and is moving into the future with increased awareness of the present. Thus, without major distortion in experience or self-image, the developmental process flows along a continuum (Cole & Hall, 1970). A schematic representation of this developmental process is depicted in Figure 1. This diagram illustrates the healthy adolescent's achievement of the five goals of adolescence, displayed at the center, through

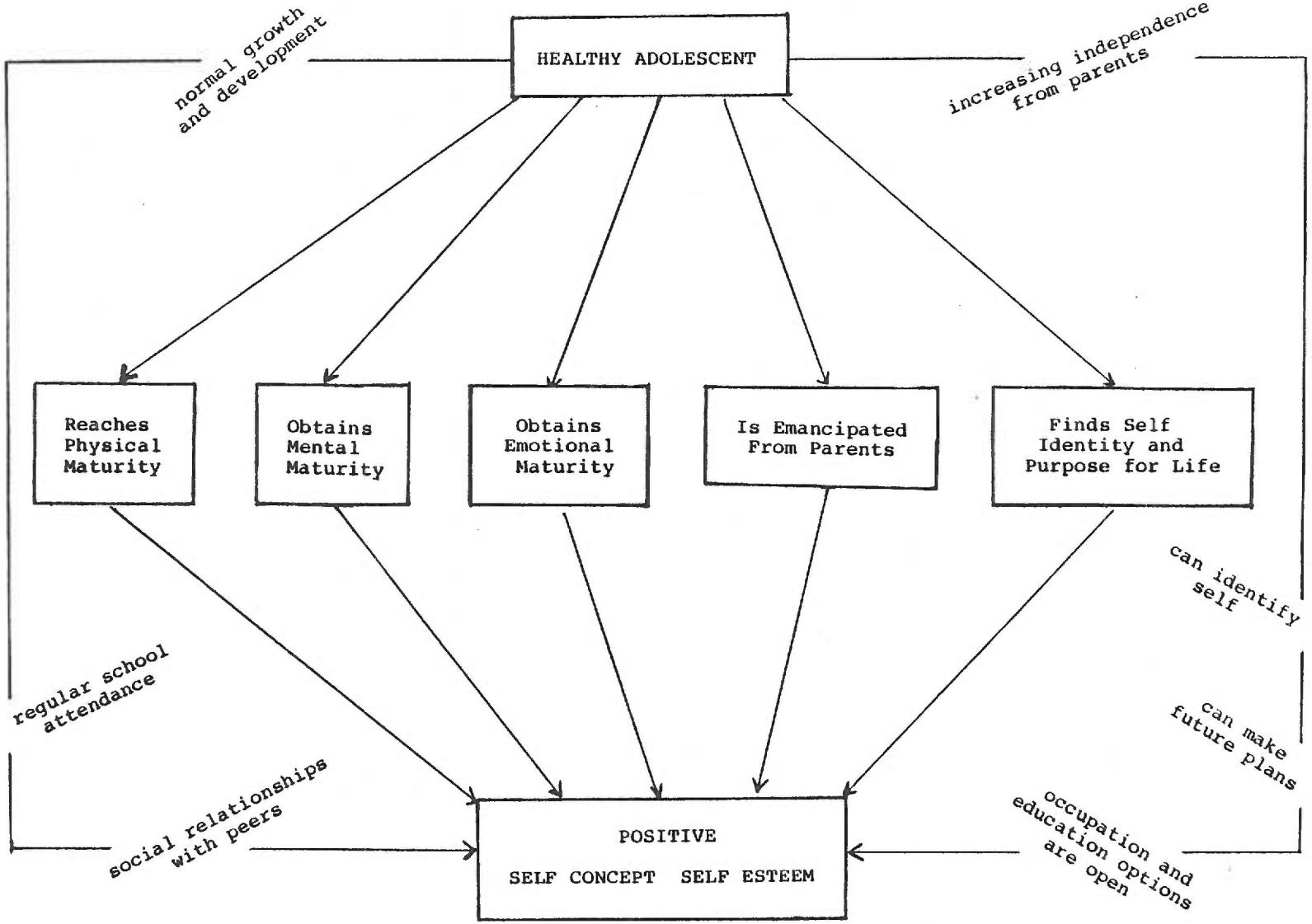

Figure 1. A Schematic Representation of the Healthy Adolescent's Development of Self-Concept and Self-Esteem.

successful completion of the development tasks of adolescence, listed along the diagram's borders. The result, shown at the base, is the formation of a positive self-concept and self-esteem by the healthy adolescent.

It is generally accepted that there are three stages of adolescence: early, middle, and late (Lowrie, 1976; Nicholson, 1980). Early adolescence (males--ages 12 to 14 years; females--ages 11 to 13 years) is marked by the onset of puberty. Along with the physical changes that occur at puberty, emotional inconsistency results and there are wide mood swings. Teenagers at this age become introspective and only confide their feelings to close friends. Adolescents that become ill at this age focus on the illness's effect on their physical appearance, functioning and mobility. It is during middle adolescence (males--age 14 to 17 years; females--age 13 to 16 years) that the greatest struggle for independence occurs.

The middle adolescent has difficulty tolerating barriers to his/her emancipation. There is still concern over the judgments of others making it difficult to cope with non-attractiveness. The adolescent is establishing sex role identity at this time. Illness at this stage of adolescence is seen as a factor that forces dependency and causes grave conflict for the adolescent.

Late adolescence (age 17 to 21 years) borders the entrance into adulthood. The late adolescent is concerned with his/her function in the world and his/her achievement level of this function. The late adolescent's life role is defined in terms of education, marriage, children, occupation and lifestyle. Illness is viewed as a threat to

the realization of career and life goals.

Adolescence is a period of physical and emotional change requiring adjustment of the adolescent's self-concept. The normal, healthy adolescent is able to go through this process and achieve a positive self-concept and high self-esteem in most cases. Clifford (1971) indicated in his study of body-satisfaction and self-satisfaction in 350 adolescents (146 males and 194 females), ages 11 to 19 years, that these adolescents usually expressed satisfaction with themselves, although males were found to be more satisfied with themselves and their bodies than females were. However, interference in the developmental process by ensuing illness or other factors can disrupt the process and prevent formation and/or maintenance of a positive (adequate) self-concept and self-esteem.

The chronically ill adolescent is usually unable to accomplish some or all of the goals of adolescent development due to illness. This is especially true of adolescents with ESRD. The physical maturation process is slowed and sometimes ceases with chronic illness, resulting in adolescents that do not go through puberty until possibly the late adolescent stage. These adolescents lack secondary sex characteristic development and are smaller in height and general size in comparison to healthy adolescents. This, combined with a physical impairment and/or disfigurement, leads to the development of negative feelings towards the body and appearance and a subsequent poor self-concept and self-esteem.

Mental and emotional maturity are also potentially blocked due to the stresses that a chronic illness and its treatment impose on the

adolescent. These adolescents are frequently unable to maintain a normal school attendance schedule. This often requires the adolescent to participate in a home instruction program which can lead to isolation from the peer group. Also, the chronic illness taxes the energies of the individual, making learning more difficult. This factor, coupled with irregular school attendance, delays progress through the educational system. Also, lack of social contact and rejection by healthy adolescents because of physical differences interferes with the normal emotional development of the chronically ill adolescent.

Forced dependency is another major problem for the chronically ill adolescent. The requirement of ongoing health care forces the adolescent to be dependent on the health care system. This leads to dependence on health care personnel, parents, and other family members for physical care and emotional support. These adolescents also need financial aid, which is frequently provided by the parents, in order to sustain living and health care costs.

Adolescents with chronic illnesses have great difficulties in finding their own identity or sense of self. This relates to all the previously mentioned problems of delayed physical, emotional and mental maturity and an inability to establish normal independence. It also involves the problem of uncertainty for the future. Because of the illness, the adolescent cannot be sure of how his/her condition may change over time. There is always the fear that the condition will become worse leading to hospitalization, further physical impairment and possibly death. This interferes with the adolescent's ability to find a purpose for his/her life. The adolescent has limited choices for educational programs and occupations. It is also difficult to make

plans for living independently or getting married and having a family, when so much depends on the individual's health status.

Summary

Chronically ill adolescents are unable to accomplish the developmental tasks of adolescence because of factors imposed by illness and ongoing treatment. An inability to progress through the normal developmental stages leads to the formation of a negative self-concept and self-esteem by these adolescents. Health care professionals, and especially nurses, can intervene in this maladaptive cycle by assessing the adolescent's self-concept and self-esteem; identifying problems, when they exist; forming a plan of care; and implementing this plan. Intervention can potentially guide the chronically ill adolescent to an improved, and eventually, a positive self-concept and self-esteem.

This process is schematically depicted in Figure 2. The diagram first represents the chronically ill adolescent's inability to achieve the five goals of adolescence. These goals, displayed at the center, are not achieved as indicated by the dotted arrows coming from the chronically ill adolescent at the top, and the dotted lines surrounding these goals. The characteristics of the chronically ill adolescent are listed along the diagram's borders. These adverse characteristics and the unachieved goals result in the formation of a negative self-concept and self-esteem by the chronically ill adolescent as illustrated by the arrows coming from all these items and pointing to negative self-concept and self-esteem. The diagram further indicates with directional arrows that intervention by health care professionals can facilitate accomplishment of some adolescent developmental tasks and goals by the

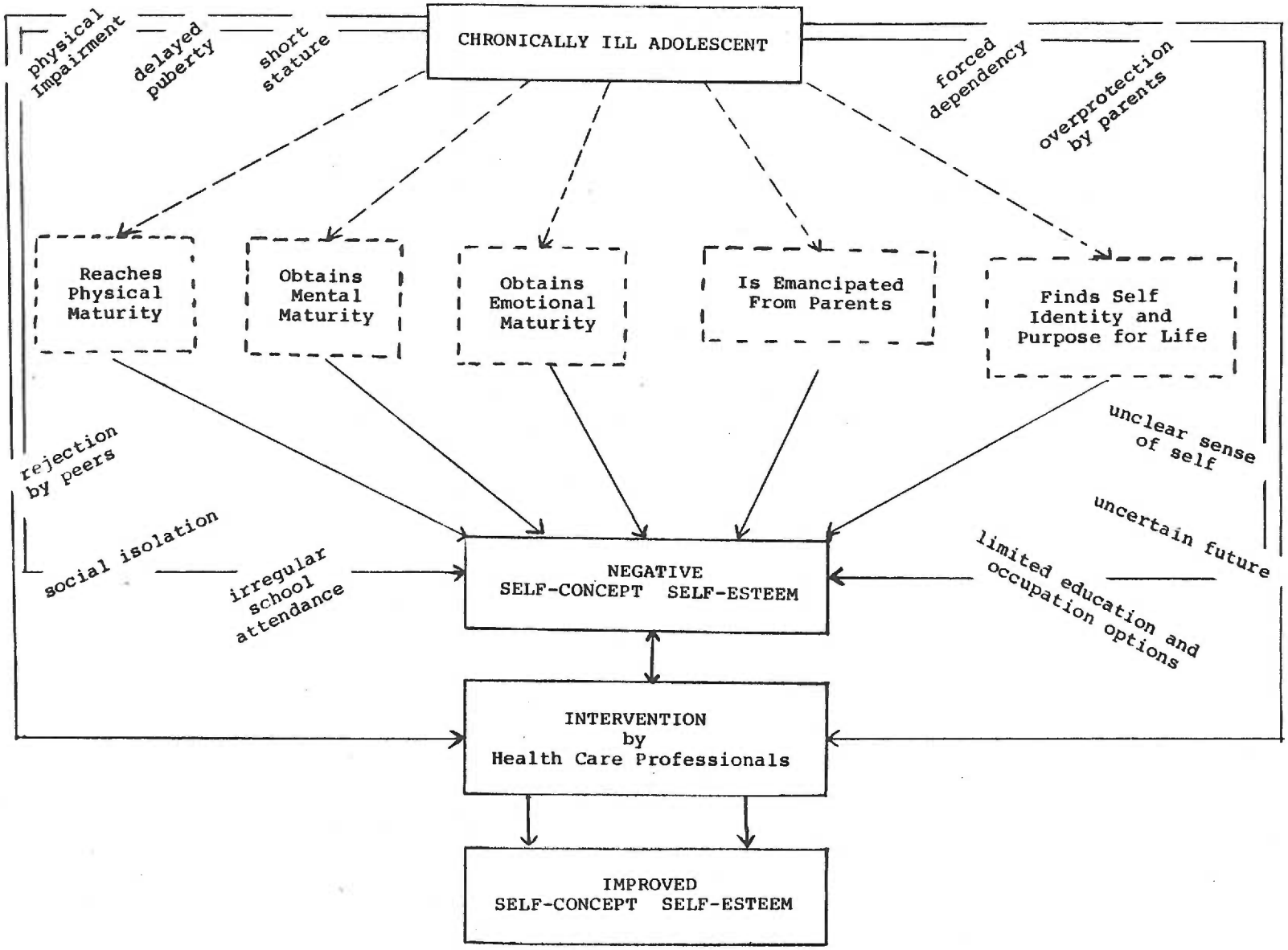

Figure 2. A Schematic Representation of the Chronically Ill Adolescent's Development of Self-Concept and Self-Esteem.

chronically ill adolescent, and thus result in improved self-concept and self-esteem.

Purpose of the Study

The purpose of this study was to measure and compare the self-concept and self-esteem of healthy adolescents and adolescents with end-stage renal disease being treated by means of kidney transplantation or chronic dialysis.

Hypotheses

The hypotheses which were explored were:

1. Adolescents with end-stage renal disease who have received kidney transplants tend to report a lower self-esteem than do healthy adolescents.

2. Adolescents with end-stage renal disease who are currently receiving chronic out-patient dialysis tend to report a lower self-esteem than do healthy adolescents.

3. Adolescents with end-stage renal disease who have received kidney transplants tend to report a less adequate (lower) self-concept than do healthy adolescents.

4. Adolescents with end-stage renal disease who are currently receiving chronic, out-patient dialysis tend to report a less adequate (lower) self-concept than do healthy adolescents.

CHAPTER II

METHODOLOGY

Setting and Subjects

The sample for the study was drawn from adolescent end-stage renal disease (ESRD) patients who were receiving health care management through the Oregon Health Sciences University's (OHSU) Renal Transplant Clinic, Home Continuous Ambulatory Peritoneal Dialysis (CAPD) Program and Hemodialysis (HD) Unit. At the time of the study, the OHSU was the major facility in the state of Oregon that provided kidney transplantation, follow-up care and chronic dialysis programs for adolescents with end-stage renal disease.

The following criteria were employed in the selection of the ESRD subjects for the study:

1. The subject must be an Oregon or southwestern Washington resident.
2. The subject must be 13 to 20 years of age.
3. The kidney transplant subject must be medically stable, out of the hospital for at least one month and free of any acute rejection episodes requiring dialysis or hospitalization at the time of the study.
4. The dialysis subject must be medially stable and be receiving dialysis therapy on an out-patient or home basis for at least one month.

The ESRD subjects were contacted during their visits to the OHSU's Renal Transplant Clinic, CAPD Clinic or HD Unit and asked to participate

in the study. Appropriate written consent was obtained from each subject and, if a minor, from his/her parent(s) or guardian. A copy of the consent appears in Appendix A.

The original intent of the study was to use a minimum of 20 subjects. However, due to patient refusals, expirations and transfers to other health care facilities, the accessible population was reduced.

A total of 13 adolescents with ESRD agreed to participate in the study; 9 adolescents with kidney transplants (4 males, 5 females) and 4 adolescents on chronic dialysis (CAPD-1 male, 2 females; HD-1 male). (During the time period allotted for data collection, one chronic dialysis subject surpassed the age limit of 20 years by 2 months with this subject being 21 years 2 months old at the time of the study. This subject was maintained in the study due to the limited number of available chronic dialysis subjects.) Testing of each ESRD subject was accomplished during the course of a OHSU clinic or HD unit visit.

After the sample population was determined, healthy adolescents were selected for the control population. Each healthy, control subject was matched to each ESRD subject using the following criteria:

1. The control subject had to be a resident of Oregon or southwestern Washington.
2. The control subject had to present a history free of chronic illness, physical disfigurement and functional disability.
3. The control subject had to be the same sex as the matched ESRD subject.
4. The control subject had to not differ in age by more than 3 to 6 months (.25 to .5 years) from the matched ESRD subject.

Control subjects meeting the criteria were selected by convenience from the Portland, Oregon community. Once identified, the control subjects were asked to participate in the study. Appropriate written consent was obtained from each control subject and, if a minor, from his/her parent(s) or guardian. (Appendix A) Control subjects were tested in their homes or in conference rooms at their schools.

Data Collection

Two testing instruments were used to collect the primary data for the study; Coopersmith's (1967) Self-Esteem Inventory (Form A) and the Piers-Harris Self-Concept Scale (1964) entitled, "The Way I Feel About Myself." Each is a self-report instrument used to measure an individual's self-esteem and self-concept. Demographic and health history data were obtained from responses to questions on a General Information Sheet and an Addendum for Adolescents with ESRD.

Independent Variable

The independent variable for this study was the treatment modality being employed for each adolescent subject with ESRD. In this study, this was either kidney transplantation or chronic, out-patient or home dialysis. The healthy, control subjects were, of course, receiving neither treatment.

Measurement of the Dependent Variables

The dependent variables for this study were self-esteem and self-concept. For the purposes of this study, self-esteem was defined as the score on the Coopersmith Self-Esteem Inventory and self-concept was

defined as the score on the Piers-Harris Self-Concept Scale.

Coopersmith Self-Esteem Inventory (SEI)

Coopersmith's Self-Esteem Inventory (SEI) is designed to measure an individual's personal judgment of worthiness as expressed in the attitude the individual holds toward the self in social, academic, family and personal areas of experience. The SEI includes a lie scale to assess extremely socialized responses. The SEI can be administered by an investigator in either an individual or group setting or can be self-administered.

The SEI (Form A) consists of a 58-item questionnaire that contains five subscales: general self (26 items), social self-peers (8 items), home-parents (8 items), lie scale (8 items) and school-academic (8 items). Most of the items were based upon items selected from the Roger and Dymond (1954) scale. Each item is a statement that reflects an attitude related to an individual's self-esteem. The respondent is requested to indicate for each item if the statement reflects a personal thought, feeling or action that is "like me" or "unlike me." A copy of this tool appears in Appendix B.

Scoring: The items of the SEI are scored in the direction of positive or high self-esteem. A composite score is obtained by first determining the number of correct reponses of all the scales (excluding the Lie Scale), and then multiplying this score by two. Thus, the maximum total score for the SEI is 100 and the minimum score is 0. A separate score for the Lie Scale is determined and indicates defensive, "lie" reactions. The items on the Lie Scale are scored in the direction of

"not lying" or of telling the truth. A maximum score of 8 and a minimum score of 0 is possible. Each subscale can be scored separately and this score indicates the degree of self-esteem the individual holds for each area of experience: general self, social, home and academics. The general self scale has a maximum score of 26 and a minimum score of 0. The social self-peers, home-parents and school-academic scales each have a maximum score of 8 and a minimum score of 0.

The Coopersmith Self-Esteem Inventory has been widely used for the measurement of self-esteem in school-age and adolescent males and females (Coopersmith, 1967; Kimball, 1972; Strodtbeck, 1972; Trowbridge, 1972; Donaldson, 1974; Ketchan & Morse, 1965; and Owens & Gustafson, 1971). Normative mean scores have been established for the composite SEI. For preadolescents (ages 9 to 15 years), the mean score for females is 70.1 and for males it is 72.2. For young adults (ages 16 to 23 years), the mean score for males and females is 76.1 (Coopersmith, 1975). Appendix F contains a summary of these studies and the normative scores obtained.

Reliability: Coopersmith (1959) obtained normative data by administering the SEI to 1,748 children attending public schools in central Connecticut. Retesting three years later of 56 children from this population revealed a test-retest reliability of .70. Fullerton (1972) reports a test-retest reliability of .64 over a 12-month interval and a split half reliability of .87. Kimball (1972) used the self-esteem inventory in testing 7,600 children, grades 4 through 8, and generated reliabilities of .87 to .92 (Kuder-Richardson Formula 20). Spatz and

Johnston (1973) through their use of the SEI with 601, 5th, 9th, and 12th-grade students obtained reliability coefficients in the range of .79 to .85 (Kuder-Richardson Formula 20).

Validity: Crandall (1973) has shown correlations of .59 and .60 between the SEI (short form) and the Rosenberg Scale from the testing of 300 college students. Simon (1972) in studying a group of 11 and 12 year olds of both sexes indicated that children with high self-esteem scores on the SEI perceived themselves as more popular with their peers than children scoring low on the SEI. Flammer and Matas (1972) administered three tools: the SEI, the Self-Other Orientation Scale and the Children's Manifest Anxiety Scale, to 48 children (mean age 9 years) and found consistant results comparing the scores of the three tests. Matteson (1974) found a positive correlation between the SEI and the Adolescent Communication Inventory in a study of 111 adolescents ages 14 and 15 years. Adolescents with low self-esteem viewed communication with their parents as less facilitative than did adolescents with high self-esteem. Many's study of 4,367 4th through 8th graders (1973) revealed a significant low negative relationship between the SEI and the Sasasian Anxiety Scale. Fullerton (1972) studied 104 5th and 6th graders of both sexes and found a validity coefficient of .44 for the SEI and tests measuring self-disclosure and risk-taking behavior.

Piers-Harris Self-Concept Scale

The Piers-Harris Children's Self-Concept Scale is designed to

measure an individual's personal self-concept (i.e., the way an individual feels about himself or herself) by determining what the person's self-attitudes are. For adolescent populations it is administered by having the investigator read the instructions aloud to either a group or an individual and then, letting the subject(s) read the statements and indicate on paper their response.

The Piers-Harris scale consists of 80 items that are designed to reflect the concerns of children in 11 categories as identified by Jersild (1952) through his intensive collection of children's statements about what they liked and disliked about themselves. These categories are: a) physical characteristics and appearances; b) clothing and grooming; c) health and physical soundness; d) home and family; e) enjoyment of recreation; f) ability in sports and play; g) ability in school and attitudes toward school; h) intellectual abilities; i) special talents (music, art); j) just me, myself; and k) personality, character, inner resources, emotional tendencies. Each item is a statement of a personal characteristic, feeling, attitude or action. The respondent is asked to "answer each item as you really feel, not as you think you ought to be" (Piers, 1970). The respondent is instructed to circle either yes or no to indicate if the statement does or does not reflect "the way you really feel inside" (Piers, 1970). Appendix C displays a copy of this tool.

Scoring: The items on the Piers-Harris Self-Concept Scale are scored in the direction of positive or high self-concept. A total

score is determined by counting the number of correct responses. The maximum score for this scale is 80 and the minimum score is 0.

Normative data for the Piers-Harris Scale were established as a result of a study of 1,183 school children ranging from Grade 4 to Grade 12 (Millen, 1966). The mean score of this normative sample was 51.84 with no significant differences found between males and females.

A number of other studies have been conducted using the Piers-Harris Self-Concept Scale as a measure of self-concept in children and adolescents (Piers, 1965; Eastman, 1965; Guardo, 1966; and Farls, 1966). Appendix G contains a summary of these studies and the normative data obtained. Several other studies other than the normative group have found no significant differences in the mean scores for Piers-Harris Scale between males and females (Farls, 1966; Piers & Harris, 1964; and Piers, 1965).

Reliability: The Piers-Harris Self-Concept Scale has been utilized extensively and judged to have good internal consistency and adequate temporal stability (Piers, 1970). Piers and Harris' (1964) testing of 363 males and females, grades 3, 6, and 10, using the 98-item scale, resulted in reliability coefficients in the range of .78 to .93 (Kuder-Richardson Formula 21). The Spearman-Brown odd-even formula was applied for half the Grade 6 and Grade 10 samples, with resulting reliability coefficients of .90 and .87, respectively. Retesting after four months on one-half of the original sample showed reliability coefficients of .71 and .72. Wing (1966) tested 244 Oregon 5th graders using the 80-item scale and had two-month and four-month test-retest reliability coefficients of .77.

Validity: The Piers-Harris Scale has been successfully correlated with many other related instruments. Millen (1966) compared scores on the Piers-Harris Scale with scores on the Children's Manifest Anxiety Scale (a self-report instrument) and the Children's Social Desirability Scale obtained through the testing of 1,183 children in grades 4, 6, 8, 10 and 12. He obtained a negative correlation of -.59 to -.69 for the Anxiety Scale and a positive correlation of .25 to .45 for the Social Desirability Scale (Pearson's r). Cox (1966) compared Piers-Harris scores with big (major) problems checked on the SRA Junior Inventory for 97 children in grades 6 through 9 and obtained a negative correlation of -.64. Cox also compared Piers-Harris scores to the perception of parents as loving vs. rejecting with a .56 correlation and to peer acceptance vs. rejection with a correlation of .61.

Extraneous Variables

There were a large number of extraneous variables that potentially had an effect on the dependent variables being investigated. Two of these variables, age and sex differences, were controlled for by matching ESRD subjects and healthy control subjects. It was beyond the scope of this study to control for other possible intervening variables that include the following: socioeconomic level, integrity of the family unit, physical stature, number of years with ESRD, number of surgical procedures performed on the ESRD subject, independence from parents, school achievement and employment status.

Demographic data reflecting some of the above-mentioned variables were collected from each ESRD subject and matched control subject using the General Information Sheet that appears in Appendix D. In addition,

health history data were obtained from the ESRD subjects using the Addendum for Adolescents with ESRD that appears in Appendix E.

Design and Procedure

The design of this study was explorative and correlational. The aim was to explore the relationship of self-concept and self-esteem between two comparison groups; healthy adolescents and adolescents with end-stage renal disease.

The Coopersmith Self-Esteem Inventory and the Piers-Harris Self-Concept Scale were administered to each subject and matched control subject by the investigator. Testing was done in an environment with minimal distractions. A consistent set of instructions was read by the investigator to the subjects before the testing began. Respondents were instructed as follows:

1. Respond to each item according to how you really think or feel inside yourself. There are no right or wrong answers.
2. You must mark one response for each item on both tests. Do not skip any items. If you are unsure of an item, please respond to the item the best you can.
3. The investigator can not answer any questions about the test items.

Other individuals accompanying the respondent were not permitted to look at the responses on the test instruments completed by the subjects or to answer any questions posed by the respondents.

After the two instruments were completed, the investigator gave the General Information Sheet to the subjects to fill out. Finally,

for the ESRD subjects, the investigator interviewed each one to obtain the data for the Addendum for Adolescents with ESRD.

CHAPTER III

RESULTS

It was the purpose of this study to compare the self-concept and self-esteem of healthy adolescents and adolescents with end-stage renal disease being treated by means of kidney transplantation or chronic dialysis. Four hypotheses were proposed:

1. Adolescents with end-stage renal disease who have received kidney transplants tend to report a lower self-esteem than do healthy adolescents.

2. Adolescents with end-stage renal disease who are currently receiving chronic out-patient dialysis tend to report a lower self-esteem than do healthy adolescents.

3. Adolescents with end-stage renal disease who have received kidney transplants tend to report a less adequate (lower) self-concept than do healthy adolescents.

4. Adolescents with end-stage renal disease who are currently receiving chronic, out-patient dialysis tend to report a less adequate (lower) self-concept than do healthy adolescents.

Sample

The adolescent ESRD subjects for the study were drawn from the Oregon Health Sciences University's Renal Transplant Clinic, Home Continuous Ambulatory Peritoneal Dialysis (CAPD) Program, and Hemodialysis (HD) Unit. A total of 13 ESRD subjects ages 13 to 21 years were included in the study. Nine of these subjects had currently functioning kidney transplants and 4 were on chronic dialysis (1-HD, 3-CAPD).

After all the ESRD subjects were identified and tested, healthy adolescent control subjects were selected by convenience from the Portland, Oregon community. These control subjects were matched by age, within 3 to 6 months (.25 to .5 years), and sex with the ESRD subjects. Table 1 compares these two characteristics for the ESRD subjects and the matched controls. Each matched pair was assigned an identification or code number. "T" indicates that the ESRD subject from the pair was a transplant patient. "CAPD" indicates that the ESRD subject from the pair was on long-term Continuous Ambulatory Peritoneal Dialysis. "HD" indicates that the ESRD subject from the pair was on long-term Hemodialysis.

Of the 13 matched pairs, 6 pairs were males and 7 pairs were females. For the transplant pairs (N=9) there were 4 males and 5 females. For the chronic dialysis pairs (N=4), there were 2 males and 2 females.

The average age of all the ESRD subjects was 18.2 years; 19.0 years for the female subjects and 17.2 years for the male subjects. The average age for the healthy, matched controls was 18.2 years; 19.1 years for the females and 17.2 years for the males. With the transplant pairs, the average age for these subjects was 17.3 years (18.4 years for the females and 15.8 years for the males) and 17.3 years for the matched controls (18.4 years for the females and 15.8 years for the males). With the chronic dialysis pairs, the average age for these subjects was 20.3 years (20.5 years for the females and 20.2 years for the males) and 20.4 years for the matched controls (20.8 years for the females and 20.0 years for the males).

The sample population for this study was composed of individuals in the early, middle and late stages of adolescence. Figure 3 illustrates

TABLE 1. A Comparison of the ESRD Subjects and the Matched, Healthy Control Subjects According to Age and Sex.

MATCHED PAIR	ESRD SUBJECTS		CONTROL SUBJECTS	
	AGE (years)	SEX	AGE (years)	SEX
T-1	15.4	FEMALE	15.8	FEMALE
T-2	20.2	FEMALE	20.1	FEMALE
T-3	19.0	FEMALE	19.2	FEMALE
T-4	16.6	MALE	16.1	MALE
T-5	17.5	MALE	18.0	MALE
T-6	13.6	MALE	13.6	MALE
T-7	15.4	MALE	15.5	MALE
T-8	19.7	FEMALE	19.5	FEMALE
T-9	18.0	FEMALE	17.8	FEMALE
CAPD-10	19.8	FEMALE	20.8	FEMALE
CAPD-11	20.8	MALE	20.4	MALE
CAPD-12	21.2	FEMALE	20.8	FEMALE
HD-13	19.5	MALE	19.7	MALE

the stage of adolescence that each matched pair represented. Of the 13 matched pairs, 1 pair (males) was in the early stage of adolescence (ages 12-14 years); 3 pairs (2 males, 1 females) were in the middle stage of adolescence (ages 14-17 years males, 13-16 years females); and 9 pairs (3 males, 6 females) were in the late stage of adolescence (ages 17-21 years). While the transplant subjects and matched controls ranged across all three stages of adolescence, all the chronic dialysis subjects were in the late stage of adolescence.

Because of the small number of chronic dialysis subjects (N=4) in the study, the data were analyzed comparing the entire ESRD sample (N=13) to the entire control sample as well as dividing the matched pairs into two groups; transplant pairs (#1 through #9) and chronic dialysis pairs (#10 through #13).

Findings From the Coopersmith Self-Esteem Inventory

The Coopersmith Self-Esteem Inventory (SEI) was the instrument used to obtain a score indicative of each subject's self-esteem. Table 2 displays a comparison of the total SEI scores obtained by each ESRD subject and each matched healthy control subject. According to the design of this instrument, a higher numerical score on the SEI is an indication that the individual exhibits a more positive or higher self-esteem. A lower SEI score indicates a more negative or lower self-esteem.

The mean score on the SEI for the ESRD subjects was 74.0 and for the matched controls it was 83.9. The mean scores for the ESRD females was 70.6 and for the ESRD males it was 78.0. The mean score for the control females was 85.7 and for control males it was 80.7. For the

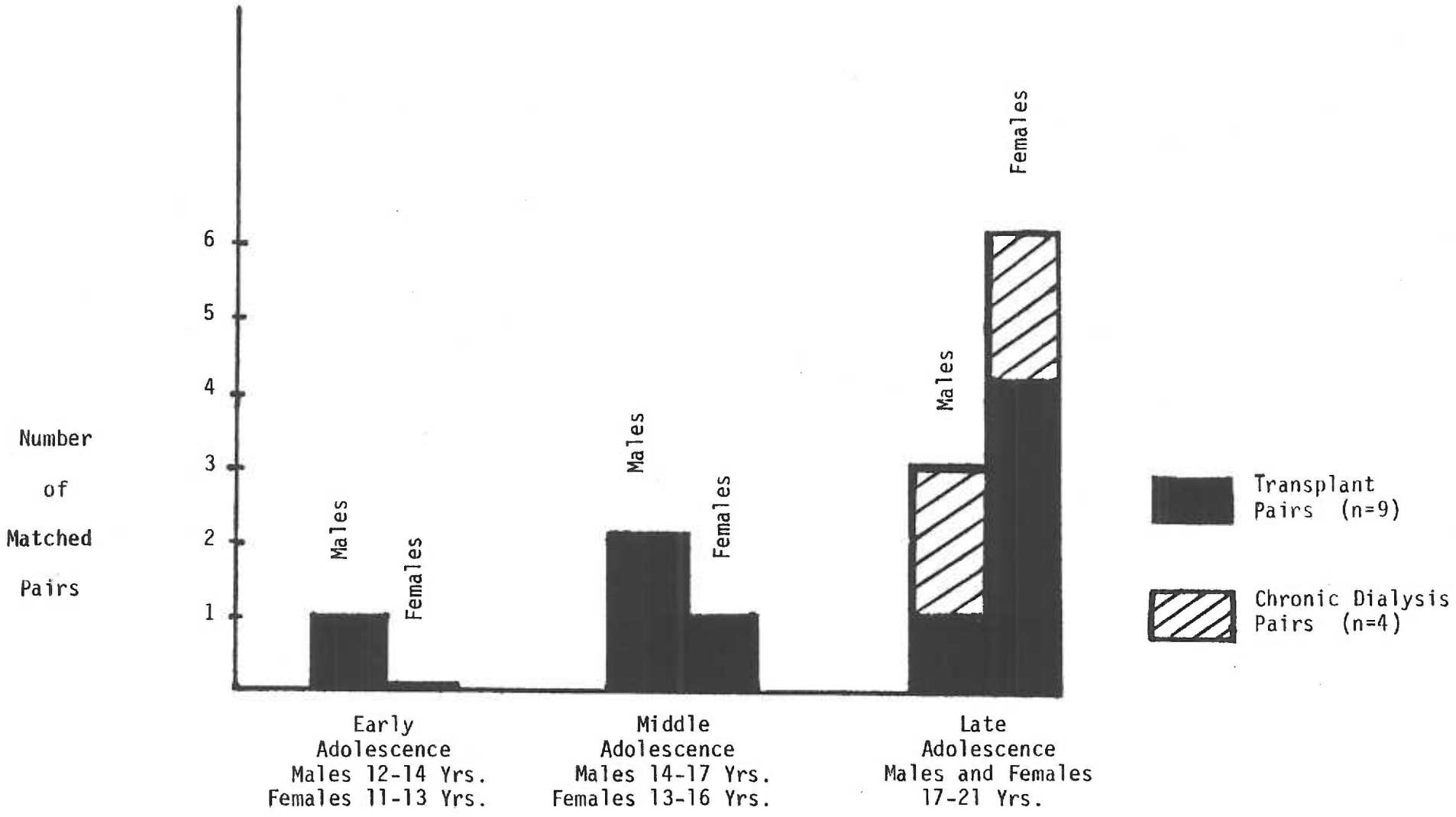

Figure 3. A Distribution of Matched Pairs Sample According to Stage of Adolescence.

transplant matched pairs, the mean SEI score for the transplant subjects was 72.7 and for the controls it was 82.2. For the chronic dialysis pairs, the dialysis subjects' mean score was 77.0 and the controls' mean score was 86.0.

The Wilcoxon Matched-Pairs Signed-Ranks Test. The Wilcoxon Matched-Pairs Signed-Ranks test was used to compare the Self-Esteem Inventory total scores of the ESRD subjects and the matched control subjects (Downie & Heath, 1965). This Wilcoxon Test was chosen for analysis of these data for several reasons: 1) it is regarded as the best of the order tests for two samples of ordinal level data, (Phillips, 1978), such as was obtained in this study; 2) it clearly indicates the direction and degree of difference between each individual matched pair's scores permitting comparison on a one-to-one basis; and 3) it allows for correlation of one group to another group based on the degree of difference between each matched pair's scores.

In 10 of the 13 pairs, the ESRD subjects scored lower on the Self-Esteem Inventory than the healthy control subjects. This is indicated in Table 2. In the case of Pairs T-6 and CAPD-11, the ESRD subjects scored higher on the SEI than the matched controls. The matched subjects in Pair T-4 obtained equal SEI scores. According to the Wilcoxon Test, the differences in the scores between the ESRD subjects and the matched healthy controls were significant. A T value of 8 was obtained. A T value of 10 or less is required for significance at the .005 level for a one-tailed test with an N=13.

Table 3 displays the comparison of the SEI scores of the transplant subjects and matched controls. For seven out of the nine pairs,

TABLE 2. The Wilcoxon Matched-Pairs Signed-Ranks Test for Differences in the Coopersmith Self-Esteem Inventory Scores of the ESRD Subjects and the Matched Healthy Control Subjects.

MATCHED PAIRS	SEI SCORES		DIFFERENCES BETWEEN SCORES OF MATCHED PAIRS	RANK	SIGNED RANK*
	ESRD SUBJECTS	CONTROL SUBJECTS			
T-1	62	78	+ 16	8.5	8.5
T-2	66	90	+ 24	12.0	12.0
T-3	74	88	+ 14	6.5	6.5
T-4	74	74	0	-	-
T-5	72	90	+ 18	10.0	10.0
T-6	86	80	- 6	4.0	- 4.0
T-7	64	68	+ 4	2.0	2.0
T-8	72	86	+ 14	6.5	6.5
T-9	84	86	+ 2	1.0	1.0
CAPD-10	66	82	+ 16	8.5	8.5
CAPD-11	82	76	- 6	4.0	- 4.0
CAPD-12	70	90	+ 20	11.0	11.0
HD-13	90	96	+ 6	4.0	4.0

*Signed Rank analyzed by Wilcoxon's Matched-Pairs Signed-Ranks Test ($T = 8$, $N = 13$, one-tailed test, $p < .005$)

TABLE 3. The Wilcoxon Matched-Pairs Signed-Ranks Test for Differences in the Coopersmith Self-Esteem Inventory Scores of the Transplant Subjects and the Matched Healthy Control Subjects.

MATCHED PAIRS	SEI SCORES		DIFFERENCES BETWEEN SCORES OF MATCHED PAIRS	RANK	SIGNED RANK*
	TRANSPLANT SUBJECTS	CONTROL SUBJECTS			
T-1	62	78	+ 16	8.5	8.5
T-2	66	90	+ 24	12.0	12.0
T-3	74	88	+ 14	6.5	6.5
T-4	74	74	0	-	-
T-5	72	90	+ 18	10.0	10.0
T-6	86	80	- 6	4.0	- 4.0
T-7	64	68	+ 4	2.0	2.0
T-8	72	86	+ 14	6.5	6.5
T-9	84	86	+ 2	1.0	1.0

*Signed Rank Analyzed by Wilcoxon's Matched-Pairs Signed-Rank Test ($\underline{T}$ = 3, N = 9, one-tailed test, $p < .01$)

the ESRD subjects had a lower SEI score than the healthy controls. According to the Wilcoxon test, the differences between the scores of the transplant subjects and the matched controls were significant. A T value of 3 was obtained. A T value of 3 is required for significance at the .01 level for a one-tailed test with an N = 9. As a result of this analysis, Hypothesis 1: adolescents with end-stage renal disease who have received kidney transplants tend to report a lower self-esteem than do healthy adolescents, was accepted.

Table 4 indicates the comparison for the Self-Esteem Inventory scores of the chronic dialysis subjects and the matched healthy control subjects. The Wilcoxon test was again used. Three of the four chronic dialysis subjects had lower scores on the SEI than the matched control subjects. However, the differences between the scores of the chronic dialysis subjects and the matched controls were not statistically significant. A T value of 1.5 was obtained. A T value of 0 is required for significance at the .025 level for a one-tailed test with N = 6 or less. Thus, Hypothesis 2: adolescents with end-stage renal disease who are currently receiving chronic out-patient dialysis tend to report a lower self-esteem than do healthy adolescents, was not accepted.

Scoring of SEI Subscales. The Coopersmith Self-Esteem Inventory was divided into five subscales: lie, social self-peers, home-parents, school-academic, and general self. A score for each subscale was obtained for each ESRD subject and matched healthy control subject. A comparison of these scores is displayed in Table 5.

The mean score on the lie scale for all ESRD subjects was 5.6 and for the matched controls was 5.5. For the transplant subjects and their

TABLE 4. The Wilcoxon Matched-Pairs Signed-Ranks Test for Differences in the Coopersmith Self-Esteem Inventory Scores for the Chronic Dialysis Subjects and the Matched Healthy Control Subjects.

MATCHED PAIRS	SEI SCORES		DIFFERENCES BETWEEN SCORES OF MATCHED PAIRS	RANK	SIGNED RANK*
	CHRONIC DIALYSIS SUBJECTS	CONTROL SUBJECTS			
CAPD-10	66	82	+ 16	3	3.0
CAPD-11	82	76	- 6	1.5	- 1.5
CAPD-12	70	90	+ 20	4.0	4.0
HD-13	90	96	+ 6	1.5	1.5

*Signed Rank Analyzed by Wilcoxon's Matched-Pairs Signed-Ranks Test (T = 1.5, N = 4, one-tailed test, $p > .025$)

TABLE 5. A Comparison of the Coopersmith Self-Esteem Inventory Subscale Scores for the ESRD Subjects and the Matched Healthy Control Subjects.

MATCHED	LIE SUBSCALE		SOCIAL SELF-PEERS SUBSCALE		HOME-PARENTS SUBSCALE		SCHOOL-ACADEMIC SUBSCALE		GENERAL SELF SUBSCALE	
PAIRS	ESRD	CONTROL	ESRD	CONTROL	ESRD	CONTROL	ESRD	CONTROL	ESRD	CONTROL
T-1	7	4	6	8	5	7	1	4	19	20
T-2	8	6	6	8	6	8	2	7	19	22
T-3	7	5	6	8	8	8	4	7	19	21
T-4	5	5	8	7	8	5	5	5	16	20
T-5	6	7	6	8	6	8	3	5	21	24
T-6	8	7	8	6	7	8	7	7	21	19
T-7	6	7	6	6	5	5	3	4	18	19
T-8	4	7	6	8	5	8	5	4	20	23
T-9	2	5	7	8	8	3	5	8	22	24
CAPD-10	6	5	5	8	7	7	6	5	15	21
CAPD-11	5	6	7	5	5	8	6	6	23	19
CAPD-12	5	5	6	8	7	8	6	6	16	23
HD-13	4	2	8	8	8	7	7	8	22	25
MEAN SCORE	5.6	5.5	6.5	7.4	6.5	6.9	4.6	5.8	19.3	21.5

matched controls, the mean lie scale score was 5.9 and for the chronic dialysis subjects, the mean lie scale score was 5.0 and the matched controls' mean score was 4.5.

The social self-peers subscale mean score for all ESRD subjects was 6.5 and for the matched controls was 7.4. For the transplant subjects, the mean social scale score was 6.6 and for their matched controls was 7.4. For the dialysis subjects, the mean social scale score was 6.5 and for their matched controls was 7.2.

The mean scores on the home-parents subscale for all ESRD subjects was 6.5 and for the matched controls was 6.9. For the transplant subjects, the mean home scale score was 6.4 and for their matched controls was 6.7 and for the chronic dialysis subjects the mean home scale score was 6.8 and for their matched controls it was 7.5.

On the school-academic subscale, the ESRD subjects had a mean score of 4.6 and the matched controls had a mean score of 5.8. The mean score for the transplant subjects was 3.9 and for their matched controls was 5.7. For the chronic dialysis subjects and their matched controls, the mean school scale score was 6.2.

The last subscale, the general self subscale, indicated a mean score for the ESRD subjects of 19.3 and for the matched controls it was 21.5. The transplant subjects' mean score was 19.4 and their matched controls' mean was 21.3. For the chronic dialysis subjects the mean score was 19.0 and for the matched controls it was 22.0.

In summary, the mean scores of four out of the five subscale were lower for the ESRD subjects in comparison to the mean subscale scores of the matched healthy control subjects. Only on the lie subscale was

the mean score of the ESRD subjects higher than that of the controls. For the transplant pairs, the transplant subjects had lower mean scores than the matched controls on all of the subscales except the lie scale in which the mean scores of the two groups were equal. It is interesting to note the much lower mean score of the transplant subjects (3.9) on the school-academic subscale as compared to the mean score of the matched controls (5.7). For the chronic dialysis pairs, the dialysis subjects' mean scores were lower than their matched controls on three of the five subscales. The dialysis subjects had a higher mean score on the lie scale than the controls, while the dialysis subjects and controls had identical mean scores for the school-academic scale.

Findings From the Piers-Harris Self-Concept Scale

The Piers-Harris Children's Self-Concept Scale was the instrument used to obtain a score indicative of each subject's self-concept. Table 6 displays a comparison of the Piers-Harris Scale scores obtained by each ESRD subject and each matched healthy control subject. According to the design of this instrument, a higher numerical score on the Piers-Harris Scale is an indication that the individual exhibits a more positive or higher self-concept, while a lower score indicates a more negative or lower self-concept.

The mean score on the Piers-Harris Scale for the ESRD subjects was 59.8 and for the matched healthy controls it was 67.4. The mean score for ESRD female subjects was 56.6 and for ESRD males it was 63.7. The mean score for control females was 66.4 and for control males it was 68.5. For the transplant subjects the mean score was 57.7 and for their matched con-

TABLE 6. The Wilcoxon Matched-Pairs Signed-Ranks Test for Differences in the Piers-Harris Self-Concept Scale Scores of the ESRD Subjects and the Matched Healthy Control Subjects.

MATCHED PAIRS	PIERS-HARRIS SCORES		DIFFERENCES BETWEEN SCORES OF MATCHED PAIRS	RANK	SIGNED RANK*
	ESRD SUBJECTS	CONTROL SUBJECTS			
T-1	50	66	+ 16	10	10
T-2	48	63	+ 15	9	9
T-3	59	69	+ 10	5	5
T-4	52	65	+ 13	8	8
T-5	56	75	+ 19	11	11
T-6	73	65	- 8	4	- 4
T-7	59	70	+ 11	6	6
T-8	67	67	0	-	-
T-9	55	76	+ 21	12	12
CAPD-10	59	62	+ 3	1	1
CAPD-11	71	59	- 12	7	- 7
CAPD-12	58	62	+ 4	2	2
HD-13	71	77	+ 6	3	3

*Signed Rank analyzed by Wilcoxon's Matched-Pairs Signed Ranks Test ($\underline{T}$ - 11, N = 13, one-tailed test, $p < .01$)

trols it was 68.4. For the chronic dialysis subjects the mean score was 64.8 and for their matched controls it was 6.5.

The Wilcoxon Matched-Pairs Signed-Ranks Test. The Wilcoxon Matched-Pairs Signed-Ranks Test was again used to compare the Piers-Harris scores of the ESRD subjects and the matched controls for the same reasons previously discussed. Table 6 depicts that in 10 of the 13 pairs, the ESRD subjects scored lower than the healthy control subjects. In the case of Pairs T-6 and CAPD-11, the ESRD subjects had a higher score than the healthy control. The matched subjects in Pair T-8 obtained identical Piers-Harris scores. According to the Wilcoxon Test, the differences in the scores between the ESRD subjects and the matched healthy controls were significant. A T value of 11 was obtained. A T value of 13 or less but greater than 10 is required for significance at the .01 level for a one-tailed test with a N = 13.

Table 7 displays the comparison of the Piers-Harris Scale scores of the transplant subjects and matched control subjects. For seven out of the nine pairs, the transplant subjects had a lower score than the matched controls. According to the Wilcoxon test, the differences in the scores between the transplant subjects and the controls were significant. A T value of 1 was obtained. A T value of 2 or less is required for significance at the .005 level for a one-tailed test with an N = 9. This data analysis permitted acceptance of Hypothesis 3: adolescents with end-stage renal disease who have received kidney transplants tend to report a less adequate (lower) self-concept than do healthy adolescents.

Table 8 depicts the comparison of the Piers-Harris Scale scores of the chronic dialysis subjects and the matched controls using the Wilcoxon

TABLE 7. The Wilcoxon Matched-Pairs Signed-Ranks Test for Differences in the Piers-Harris Self-Concept Scale Scores of the Transplant Subjects and the Matched Healthy Control Subjects.

MATCHED PAIRS	PIERS-HARRIS SCORES		DIFFERENCES BETWEEN SCORES OF MATCHED PAIRS	RANK	SIGNED RANK*
	TRANSPLANT SUBJECTS	CONTROL SUBJECTS			
T-1	50	66	+ 16	6	6
T-2	48	63	+ 15	5	5
T-3	59	69	+ 10	2	2
T-4	52	65	+ 13	4	4
T-5	56	75	+ 19	7	7
T-6	73	65	- 8	1	- 1
T-7	59	70	+ 11	3	3
T-8	67	67	0	-	-
T-9	55	76	+ 21	8	8

*Signed Rank analyzed by Wilcoxon's Matched-Pairs Signed-Ranks Test ($T = 1$, $N = 9$, one-tailed test, $p < .005$)

TABLE 8. The Wilcoxon Matched-Pairs Signed-Ranks Test for Differences in the Piers-Harris Self-Concept Scale Scores of Chronic Dialysis Subjects and Matched Healthy Control Subjects.

MATCHED PAIRS	PIERS-HARRIS SCORES		DIFFERENCES BETWEEN SCORES OF MATCHED PAIRS	RANK	SIGNED RANK*
	CHRONIC DIALYSIS SUBJECTS	CONTROL SUBJECTS			
CAPD-10	59	62	+ 3	1	1
CAPD-11	71	59	- 12	4	- 4
CAPD-12	58	62	+ 4	2	2
HD-13	71	77	+ 6	3	3

*Signed Rank analyzed by Wilcoxon's Matched-Pairs Signed-Ranks Test ($\underline{T}$ = 4, N = 4, one-tailed test, $p > .025$)

Test. Though three out of the four chronic dialysis subjects had lower scores than the healthy matched controls, this difference was not statistically significant. A T value of 4 was obtained. However, a T value of 0 is required for significance at the .025 level for a one-tailed test with an N= 6 or less. Thus, Hypothesis 4: adolescents with end-stage renal disease who are currently receiving chronic out-patient dialysis tend to report a less adequate (lower) self-concept than do healthy adolescents, was not accepted.

Summary of Data From General Information Sheet

Demographic data were obtained for each ESRD subject and matched control subject using the General Information Sheet (Appendix D). These data for the ESRD subjects are summarized in Table 9 and for the healthy control subjects in Table 10.

All of the ESRD subjects and matched controls in the early and middle stages of adolescence were attending school (N = 4). Five transplant matched pairs and all four chronic dialysis matched pairs were in the late stage of adolescence. Of these five transplant subjects, four were attending school; two were completing their last year of high school, one was attending a G.E.D. program and one was attending college. All of the five healthy control subjects matched to the transplant subjects were attending school; two were completing their last year of high school and three were attending college. Of the four chronic dialysis subjects, only one was attending school and was completing last year of high school at an alternative, vocational school. The other three chronic dialysis subjects had completed high school or a G.E.D. All of the four healthy control subjects matched to the dialysis subjects were attending college.

TABLE 9. A Summary of the ESRD Subjects' Selected Demographic Variables

MATCHED PAIRS	AGE (years)	SEX	SCHOOL STATUS		OCCUPATIONAL STATUS		MEMBERS OF CURRENT HOUSEHOLD
			LAST GRADE COMPLETED	TYPE OF SCHOOL NOW ATTENDING	JOB TITLE	HOURS OF WORK PER WEEK	
T-1	15.4	Female	8	High School	None	-	Mother, Father, Brothers-2
T-2	20.2	Female	10	GED Prog.	Waitress	8	Mother, Sister-1
T-3	19.0	Female	12	None	None	-	Husband
T-4	16.6	Male	8	High School	None	-	Mother, Brother-1
T-5	17.5	Male	11	High School	None	-	Mother, Father, Brothers-2, Sister-1
T-6	13.6	Male	7	Junior High School	None	-	Mother, Father, Brother-1, Sister-1
T-7	15.4	Male	9	High School	None	-	Mother, Stepfather
T-8	19.7	Female	13	College	None	-	Mother, Father, Sister-1, Nieces, Nephews-3
T-9	18.0	Female	11	High Sch.	Reception-ist and Waitress	20	Mother, Father, Brothers-2
CAPD-10	19.8	Female	11	Vocational Village	None	-	Mother, Brother-1
CAPD-11	20.8	Male	12	None	None	-	Mother, Father, Brother-1, Sister-1
CAPD-12	21.2	Female	12	None	Computer Operator	40	Mother, Father, Sisters-2
HD-13	19.5	Male	G.E.D.	None	None	-	Mother, Father, Brother-1

TABLE 10. A Summary of Healthy Control Subjects' Selected Demographic Variables.

MATCHED PAIRS	AGE (years)	SEX	SCHOOL STATUS		OCCUPATIONAL STATUS		MEMBERS OF CURRENT HOUSEHOLD
			LAST GRADE COMPLETED	TYPE OF SCHOOL NOW ATTENDING	JOB TITLE	HOURS OF WORK PER WEEK	
T-1	15.8	Female	9	High School	None	-	Mother, Father, Brother-1, Sister-1
T-2	20.1	Female	13	College	None	-	Roommate-1
T-3	19.2	Female	13	College	Babysitter	6	Roommate-1
T-4	16.1	Male	8	High School	None	-	Mother, Father
T-5	18.0	Male	11	High School	Service Station Attendant	16	Mother, Sister-1
T-6	13.6	Male	7	Junior High School	None	-	Mother, Father, Brother-1, Sisters-2
T-7	15.5	Male	8	Junior High School	Repairman	15	Mother, Father, Sister-1
T-8	19.5	Female	13	College	None	-	Roommate-1
T-9	17.8	Female	11	High School	None	-	Mother, Stepfather
CAPD-10	20.8	Female	13	College	None	-	Roommate-1
CAPD-11	20.4	Male	13	College	None	-	Roommate-1
CAPD-12	20.8	Female	14	College	None	-	Roommate-1
HD-13	19.7	Male	13	College	Music Conductor; Maintenence man	40	Roommate-1

Three of the ESRD subjects were employed. Two were working part-time as waitresses (receptionist) while attending school. One ESRD subject on CAPD was working full-time as a computer operator. Four healthy control subjects were employed at a variety of part-time jobs (babysitter, service station attendant, repairman, maintenance man, conductor) while attending school.

All of the ESRD and healthy control subjects in the early and middle stages of adolescence were living at home with their parent(s) and sibling(s). Eight of the nine ESRD subjects in the late stage of adolescence were living at home with their parent(s) and sibling(s). One ESRD subject (transplant) was married and lived alone with her husband. Of the nine healthy control subjects in the late stage of adolescence, seven were living with roommates (including all four dialysis matched controls) and two (still in high school) were living at home with parent(s) and sibling(s).

The current height and weight of each subject was obtained from the report of each individual on the General Information Sheet. A comparison of the heights and weights of the ESRD subjects and their matched controls is presented in Table 11. Twelve of the 13 healthy control subjects were taller than the ESRD subjects. The control subjects' heights exceeded those of the ESRD subjects by a range of 3 to 24 inches. The mean difference was 11.6 inches. Eleven of the 13 control subjects weighed more than the ESRD subjects. The weights of the control subjects exceeded those of the ESRD subjects by a range of 15 to 126 pounds. The mean difference was 43 pounds.

Information concerning the ESRD subject's health history was

TABLE 11. A Comparison of Height and Weight Data for the ESRD Subjects and the Healthy Control Subjects.

MATCHED PAIRS	HEIGHT (inches)		Differences in Height (inches)	WEIGHT (pounds)		Differences in Weight (pounds)
	ESRD SUBJECTS	CONTROL SUBJECTS		ESRD SUBJECTS	CONTROL SUBJECTS	
T-1	58.5	67.0	8.5	146	135	11*
T-2	56.2	72.0	15.8	106	180	74
T-3	66.5	71.0	4.5	128	156	28
T-4	52.2	68.0	15.8	108	136	28
T-5	73.0	72.0	1.0**	235	176	59*
T-6	47.0	63.0	16.0	84	115	31
T-7	59.0	70.5	11.5	123	140	17
T-8	50.0	67.0	17.0	88	150	62
T-9	65.0	68.0	3.0	105	125	20
CAPD-10	54.5	65.0	10.5	91	135	44
CAPD-11	67.0	72.0	5.0	135	162	27
CAPD-12	59.0	67.0	8.0	120	135	15
HD-13	52.0	76.0	24.0	74	200	126

* ESRD subject weighs more than control subject.
**ESRD subject is taller than control subject.

obtained from responses on the General Information Sheet's Addendum For Adolescents with ESRD (Appendix E). This health history information for the Transplant subjects is summarized in Table 12 and for the chronic dialysis subjects in Table 13.

The number of years each transplant subject had been diagnosed with end-stage renal disease ranged from 2 to 12 years with a mean of 6.8 years. None of the transplant subjects had ever received chronic peritoneal dialysis in any form. However, six of the nine subjects had received hemodialysis for a mean time period of 4.2 months. Eight of the nine transplant subjects had received only one renal transplant while one subject had received two kidney transplants. The mean time period that all the transplant subjects had a functioning kidney transplant ranged from .25 years (three months) to 11.5 years with a mean of 4.9 years. Four of the subjects had transplants from cadaver donors and five had transplants from living-related donors (mothers, father, sister).

The number of major surgical procedures undergone by each transplant subject ranged from one to six with a mean of 3.4. These major surgical procedures consisted of the following: arteriovenous fistula or shunt placements, kidney transplants, native nephrectomies, pericardiocentesis, parathyroidectomies, lymphocele repair, bilateral herniorrhaphies, splenectomy, repair of a urinary tract obstruction and tendon release of the left leg.

The number of years each chronic dialysis subject had been diagnosed with ESRD ranged from .75 (nine months) to 13 years with a mean of 4.7 years. One CAPD subject had been on hemodialysis for 10 months

TABLE 12. A Summary of the Transplant Subjects' Health History Information.

MATCHED PAIRS	AGE (years)	SEX	TYPE OF KIDNEY DISEASE	YEARS WITH ESRD	TIME ON HD *	NUMBER OF TRANSPLANTS	TIME WITH FUNCIONING TRANSPLANT(S)	DONOR OF TRANSPLANTS	NUMBER OF MAJOR SURGICAL PROCEDURES
T-1	15.4	Female	Medullary Cystic	5	None	1	3.83 yrs.	Father	1
T-2	20.2	Female	Cytinosis	12	2 mos.	1	11.08 yrs.	Mother	3
T-3	19.0	Female	Glomerulo-nephritis	5	4 mos.	1	4.58 yrs.	Mother	3
T-4	16.6	Male	Hypoplastic Kidneys	4	3 mos.	1	3.83 yrs.	Cadaver	5
T-5	17.5	Male	Glomerulo-nephritis	5	10 mos.	1	4.42 yrs.	Cadaver	6
T-6	13.6	Male	Hypoplastic Kidneys	10	None	1	4.25 yrs.	Mother	2
T-7	15.4	Male	Hypoplastic Kidneys	5	None	1	3.75 yrs.	Cadaver	4
T-8	19.7	Female	Cystinosis	12	3 mos.	2	#1 11.5 yrs. #2 .25 yrs.	#1 Mother #2 Sister	4
T-9	18.0	Female	Glomerulo-nephritis	2	3 mos.	1	1.33 yrs.	Cadaver	3

* All transplant subjects had never been on chronic peritoneal dialysis in any form.

TABLE 13. A Summary of the Chronic Dialysis Subjects' Health History Information

MATCHED PAIRS	AGE (years)	SEX	TYPE OF KIDNEY DISEASE	TIME WITH ESRD	TIME ON HD	TIME ON CURRENT MODE OF DIALYSIS	NUMBER OF TRANSPLANTS	NUMBER OF MAJOR SURGICAL PROCEDURES
CAPD-10	19.8	Female	Hypopolastic Kidneys	13 yrs.	8 mos.	8 mos.	3	11
CAPD-11	20.8	Male	Medullary Cystic	2 yrs.	None	1.25 yrs.	None	2
CAPD-12	21.2	Female	Glomerulo-nephritis	9 mos.	None	7 mos.	None	2
HD-13	19.5	Male	Medullary Cystic	3 yrs.	2.83 yrs.*	2.83 yrs.	None	1

* HD-13 ESRD subject had never been on chronic peritoneal dialysis in any form.

and had received three previous kidney transplants. The HD subject had never received any form of chronic peritoneal dialysis. Two of the CAPD subjects and the HD subject had never received a kidney transplant. The number of major surgical procedures undergone by the chronic dialysis subjects ranged from one to 11 with a mean of 4. These surgical procedures consisted of the following: arteriovenous fistula or shunt placements, kidney transplants, transplant nephrectomies, native nephrectomies, pericardiocentesis, and placement of peritoneal dialysis catheters.

CHAPTER IV

DISCUSSION

Self-Esteem

The results of this study clearly indicated that adolescents, ages 13 to 21 years, with end-stage renal disease reported a lower self-esteem than healthy adolescents, matched on the basis of sex and age (within three to six months), when the Coopersmith Self-Esteem Inventory (SEI) was used as the assessment instrument.

This result was evidenced by a comparison of all ESRD subjects' and all healthy control subjects' mean scores on the SEI. Table 14 summarizes this comparison.

TABLE 14

A Comparison of the Group of ESRD Subjects and the Group of Healthy Control Subjects' Mean Scores for the Coopersmith Self-Esteem Inventory.

MATCHED PAIR GROUP	MEAN SCORES ESRD SUBJECTS	MEAN SCORES CONTROL SUBJECTS	% LOWER ESRD MEAN SCORE IS THAN CONTROL
ESRD PAIRS #1-13	74.0	83.7	11.8%
TRANSPLANT PAIRS #1-19	72.7	82.2	11.6%
CHRONIC DIALYSIS PAIRS #10-13	77.0	86.0	10.5%

The group of ESRD subjects' mean score on the SEI was 11.8% lower than the mean score of the control group. The two ESRD subgroups, the transplant subjects and chronic dialysis subjects, had mean SEI scores that were 11.6% and 10.5% lower than their matched control subjects, respectively.

There were some differences noted between the SEI scores of males and females in both the ESRD and the healthy control groups. For the ESRD subjects, the SEI mean score for females was 70.6 which was 10.5%

lower than the mean score of 78.0 for the males. For the control subjects, however, the SEI mean score for the males was 80.7 which was 5.9% lower than the females' mean score of 85.7. Coopersmith's (1967) normative data indicated a higher average score for males than females 9 to 15 years of age and an equal SEI score for males and females ages 16 to 23 years. The slightly lower score of the control males, average age of 17.2 years, was congruent with Coopersmith's findings. The determination of a lower self-esteem score in ESRD adolescent females in comparison to ESRD males was supported by Meissner's (1967) study of adolescents with physical disabilities which indicated that the females in his study made more negative self-statements and had poorer body images than the males.

The Wilcoxon Matched-Pairs Signed-Ranks Test was used to compare the scores of each ESRD subject and each matched healthy control subject. The results of this test further substantiated the findings of lower self-esteem in adolescents with ESRD. Seventy-seven percent of the ESRD subjects had lower SEI scores than the control subjects. The difference between the ESRD subjects' SEI scores and the control subjects' SEI scores was determined to be significant at the 0.5% level indicating that the adolescents with ESRD in this study exhibited a significantly lower self-esteem than the matched healthy adolescents. This result corresponds to the discoveries by other researchers who have studied self-esteem and related attributes. In the adolescent's view, attractiveness is often decreased by chronic illness (Frauman & Sypert, 1979). Secord and Jourard (1953) have indicated that negative feeling about one's body is commensurate with feelings of insecurity about the self

as a whole. Schwab and Harmeling's (1968) study of ill adults also indicated that negative feelings towards the parts of their body affected by illness resulted in an overall negative self-image and emotional distress. Thus, it appears that chronic illness produces negative feelings towards oneself that can result in the development of negative self-esteem.

Transplant Subgroup. The difference between the transplant subgroup's SEI scores and the matched control subgroup's scores was determined to be significant at the 1% level indicating that the adolescents with kidney transplants in this study exhibited a significantly lower self-esteem than the matched adolescents. This outcome was similar to that of the previous studies of Grushkin (1973) who indicated poor self-esteem in transplant patients due to an unattractive physical appearance and delayed physical development and of Korsch (1973) and Fine (1978) who both indicated there was severe damage to the self-esteem of adolescents with kidney transplants.

Chronic Dialysis Subgroup. Though three of the four, or 75%, of the chronic dialysis subjects scored lower on the SEI than their matched controls, the difference between their scores was not statistically significant. There were two possible explanations for this. The first was that the self-esteem of adolescents with ESRD on chronic dialysis was not significantly lower than those of healthy adolescents. There was minimal support for this in the literature. Sorrels (1981) stated that CAPD patients did maintain a positive self-image. Three groups (Shmerling, 1981; Balfe, 1981; Maksym Nelson, 1980) reported on a very limited number of adolescents on CAPD and indicated that these patients were able

to maintain a certain degree of independence that positively influenced their self-esteem.

The other explanation is that a Type II error was committed in statistical analysis due to the small size of four chronic dialysis subjects, and that the self-esteem for adolescents on chronic dialysis was actually significantly lower than those of healthy adolescents. This explanation was supported by the previous studies of Kaplan De-Nour (1979), Scharer (1976) and Gilman and Frauman (1973) who indicated that adolescents on chronic hemodialysis were disturbed about mandatory dependence on a machine for survival, had body-image problems and were socially isolated. Also Burton's (1981) study of CAPD patients indicated that they demonstrated a higher degree of depression and self-depreciation than the general public. Due to the support of previous studies and the findings that the ESRD group as a whole had a significantly lower self-esteem than healthy adolescents, it seemed most likely that a Type II error was committed in the comparison of the chronic dialysis subjects and their matched controls.

SEI Subscales. A more detailed analysis of the ESRD adolescents' self-esteem was provided by calculating the mean scores on the five Self-Esteem Inventory Subscales: lie, social-self peers, home-parents, school-academic and general self for the ESRD group and the matched healthy control group. A comparison of these mean scores is displayed in Table 15.

TABLE 15

A Comparison of the Mean Scores on the SEI Subscales for the ESRD Subjects and the Healthy Control Subjects (N = 13).

SEI SUBSCALE	MEAN SCORE ESRD SUBJECTS	MEAN SCORE CONTROL SUBJECTS	DIFFERENCE*
Lie	5.6	5.5	- 0.1
Social Self-Peers	6.5	7.4	0.9
Home-Parents	6.5	6.9	0.4
School-Academic	4.6	5.8	1.2
General Self	19.3	21.5	2.2

* Negative difference indicates control subjects' mean score was lower than ESRD subjects' mean scores.

The ESRD subjects' mean scores were lower than the control subjects' for every subscale except the lie scale in which the ESRD subjects' mean score was slightly higher. The two areas that indicated the greatest difference between the mean scores were in the social self-peers and the school-academic subscales.

Table 16 depicts the comparison between the transplant subjects' and the matched controls' mean scores for the SEI subscales. The greatest differences were again in the areas of social self-peers and school-academics with the transplant subgroup scoring lower in these areas than the healthy control subgroup. No difference was found in the lie subscale.

TABLE 16

A Comparison of the Mean Scores on the SEI Subscales for the Transplant Subjects and the Healthy Control Subjects (N = 9).

SEI SUBSCALE	MEAN SCORE TRANSPLANT SUBJECTS	MEAN SCORE CONTROL SUBJECTS	DIFFERENCE
Lie	5.9	5.9	0
Social Self-Peers	6.6	7.4	0.8
Home-Parents	6.4	6.7	0.3
School-Academic	3.9	5.7	1.8
General Self	19.4	21.3	1.9

Table 17 presents a comparison of the subscale mean scores for chronic dialysis subjects and their matched controls. The greatest differences between the two groups were found in the social self-peers and home-parents scales. No difference was found in the school-academic mean scores. The ESRD group did obtain a higher mean score for the lie scale than the control group.

TABLE 17

A Comparison of the Mean Scores on the SEI Subscales for the Chronic Dialysis Subjects and the Healthy Control Subjects (N = 4).

SEI SUBSCALE	MEAN SCORE CHRONIC DIALYSIS SUBJECTS	MEAN SCORES CONTROL SUBJECTS	DIFFERENCE*
Lie	5.0	4.5	- 0.5
Social Self-Peers	6.5	7.2	0.7
Home-Parents	6.8	7.5	0.7
School-Academic	6.2	6.2	0
General Self	19.0	22.0	3.0

*A negative difference indicates control subjects' mean score was lower than ESRD subjects' mean score.

The finding of lower self-esteem in the areas of social self-peers and school-academic for adolescents with ESRD was basically consistent with the documentation in the literature. Many sources have indicated that chronically ill adolescents have difficulties establishing peer relationships, experience social isolation and are unable to maintain average school attendance and performance due to their poor health (Steinhauer, et al., 1974; Wolfish & McLean, 1974; Waechter, 1979). The equality of the school-academic subscale mean scores for the chronic dialysis matched pairs differed from the finding that the transplant subgroup

and the ESRD group as a whole had lower mean scores on this subscale than the healthy control subjects. However, it was noted that all the chronic dialysis subjects were in the late stage of adolescence and had either completed high school or the equivalence (G.E.D.), or were completing their last year of high school. Thus, school may not have been a significant concern in their lives at the time this study was conducted.

The chronic dialysis subjects had a mean score on the lie subscale that was higher than the mean score of the matched controls. A lower score on the lie scale indicates that the respondent may be attempting to provide responses he/she thinks will please the interviewer. Thus, the lower lie scale mean score obtained by these control subjects implies that they were providing responses that were not as accurate a reflection of their real feelings as the responses of the chronic dialysis subjects.

The difference between the mean scores of the chronic dialysis group and the matched controls for the home-parents subscale was greater than the difference between the transplant matched pairs and the ESRD matched pairs. Again, this may have been related to the chronic dialysis subjects all being in the late stage of adolescence. Independence from parents is important for adolescents in this age group. Often for the chronically ill adolescent, independence from parents, health care personnel, and treatment regimens is not possible. This forced dependence and lack of control over one's life is known to have an adverse effect on the adolescent's self-esteem (Rubin, 1968; Udelman, 1979; Anyan, 1978) and was apparently a factor that influenced the lower self-esteem of the ESRD adolescents in this study.

Self-Concept

The findings of this study indicate that adolescents, ages 13 to 21 years, with end-stage renal disease report a less adequate (lower) self-concept than healthy adolescents, matched on the basis of sex and age (within three to six months), when the Piers-Harris Children's Self-Concept Scale was used as the assessment instrument.

This result was suggested by a comparison of the ESRD subjects' and the matched healthy control subjects' mean scores on the Piers-Harris Scale. Table 18 demonstrates this comparison.

TABLE 18

A Comparison of the Group of ESRD Subjects and the Group of Healthy Control Subjects' Mean Scores for the Piers-Harris Self-Concept Scale.

MATCHED PAIR GROUP	MEAN SCORES ESRD SUBJECTS	MEAN SCORES CONTROL SUBJECTS	% LOWER ESRD MEAN SCORE IS THAN CONTROL
ESRD Pairs #1-13	59.8	67.4	11.2%
Transplant Pairs #1-9	57.7	68.4	15.7%
Chronic Dialysis Paris #10-13	64.7	65.0	0.4%

The ESRD group's mean score on the Piers-Harris Scale was 11.2% lower than the mean score of the control group. The transplant subgroup had a mean score that was 15.7% lower than the matched control subgroup. The chronic dialysis subgroup's mean score for the Piers-Harris Scale was just slightly lower than the mean score for the matched controls with only a 0.4% difference.

Differences were noted between the Piers-Harris scores of males and females in both the ESRD and healthy control groups. Female ESRD subjects had a 11.2% lower mean score (56.6) than ESRD males (63.7).

For the control group, the Piers-Harris mean score of the females (66.4) was 3% lower than the mean score of the males (68.5). The finding of a lower self-concept in ESRD females in comparison to ESRD males was consistent with Meissner's (1967) study. However, it differs from the study conducted to obtain normative data for the Piers-Harris Scale (Miller, 1966), in which no significant difference was found between the scores of males and females.

The Wilcoxon Matched-Pairs Signed-Ranks Test was used to compare the scores of each ESRD subject and matched healthy control subject. This statistical analysis confirmed that the adolescents with ESRD in this study exhibited a lower self-concept than the healthy adolescents. The majority of the ESRD subjects (77%) had Piers-Harris Scale scores that were lower than the matched healthy controls. The differences between the scores of the ESRD group and the control group were significant at the 1% level. This indicated that the adolescents with ESRD displayed a significantly lower self-concept in comparison to the healthy adolescents. The outcome of this study is very similar to that of Meissner's (1967) study of disabled adolescents which indicated that the chronic disability and illness have a negative effect on the self-image and self-concept of the adolescent.

Transplant Subgroup. The difference between the Piers-Harris scores of the transplant subgroup and matched control subgroup was significant at the 0.5% level indicating that adolescents with renal transplants reported a significantly lower self-concept than healthy adolescents. Support for this conclusion was found in the studies of Grushkin (1973), Korsch (1973) and Fine (1978) as well as Poznanski's (1978) study which indicated that most transplant patients had depressive feelings, negative

self-images, and difficulties in forming relationships.

Chronic Dialysis Subgroup. The difference between the scores of the chronic dialysis subjects and the matched controls was not statistically significant. Three of the four chronic dialysis subjects obtained lower Piers-Harris scores than the healthy controls. However, the mean score of the dialysis subjects was only 0.4% below the mean of the controls. The two possible explanations for this were similar to those discussed in reference to the self-esteem findings for the dialysis group. The first explanation is that the adolescents receiving chronic dialysis did not have self-concepts that were lower than those of healthy adolescents. Though this conclusion was not well supported by other studies (Kaplan De-Nour, 1970; Scharer, 1976; Burton, 1981), there was increased evidence within this study to accept it because: 1) there was such a small difference between the mean scores on Piers-Harris Scale of the dialysis subjects and the healthy controls, and 2) the Wilcoxon test indicated no significant difference between the self-concept of adolescents on chronic dialysis and healthy adolescents. The second explanation was that a Type II error was committed in the Wilcoxon analysis due to the small sample size of four and that there actually was significantly lower self-concepts exhibited by the chronic dialysis subjects in comparison to healthy adolescents. Despite findings similar to this in other studies, the results of this study did not support this conclusion.

Review of Demographic Data

There were some meaningful differences noted between some of the characteristics of the ESRD subjects and the healthy control subjects.

These data were obtained by the report of each subject, utilizing the General Information Sheet (Appendix D) and are summarized in Tables 9 and 10.

Chronically ill adolescents including adolescents with ESRD frequently are unable to attend school regularly due to the time and energy limitations imposed by their illness and the treatment modalities employed (Steinhauer, et al., 1974). This problem appeared to be present among this study's ESRD subjects in the late stage of adolescence. There were seven ESRD subjects over the age of 19 years. Of these seven adolescents with ESRD, one was attending college, three had graduated from high school and were not attending college, and one had obtained a G.E.D. The other two ESRD subjects (ages 20.17 years and 19.75 years) were still working toward the completion of a high school diploma or a G.E.D. The school attendance and achievement of these adolescents with a chronic illness was in sharp contrast to the matched healthy control subjects who were 19 years of age or older and all of whom were attending college.

Another area of interest was the occupational status of these seven adolescents with ESRD who were 19 years of age and older. Only one of these ESRD subjects was employed full-time (as a computer operator). One other ESRD adolescent was working part-time (as a waitress) while attending school. The other five adolescents with ESRD were not working, and three of these five were also not attending school. The finding that the majority of these seven ESRD subjects were not working is in accordance with references in the literature that discuss the difficulties that chronically ill adolescents have

in obtaining and maintaining employment due to a lack of education and training, and frequent absences from work (Waechter,1979; Anyan, 1978). The time and energy expended by adolescents with ESRD to sustain the basic activities of daily living and the treatment regimen for their illness, often does not allow for educational and occupational pursuits. Two of the seven healthy adolescents 19 years of age and older were working part-time while attending college.

Another interesting note from these data relates to the chronically ill adolescent's difficulty in achieving independence from parents and family. It is frequently impossible for adolescents with ESRD (or other chronic illnesses) to become independent from their parents. Some of the reasons for this include: 1) physical limitations that require the adolescent to need assistance with personal care and the activities of daily living, 2) the adolescent's inability to obtain and/or maintain a job and earn enough money to cover living expenses, and 3) the financial burden of health care and medical treatment that cannot be managed by the adolescent. These factors force the individual in the late stage of adolescence to be dependent on their parents, other family members, and health care personnel. This forced dependency has been suggested to produce feelings of helplessness, anger and confusion in chronically ill adolescents (Jelneck, 1977) and has led to a loss of self-respect and negative self-esteem (Rubin, 1968; Udelman, 1979). All of the adolescents with ESRD 19 years of age and older were living at home with their parent(s) and sibling(s), except for one transplant subject who was married and living with her husband. In comparison, all of the healthy adolescents in this study who were

19 years of age or older, were living outside of their parent(s)' home. These data appear to indicate that the adolescents with ESRD are potentially more dependent on their parent(s) and families than the healthy adolescents.

The frequent problem of short stature and delayed physical growth that is associated with chronically ill adolescents and especially with ESRD patients was evidenced by this study's ESRD adolescents. Table 11 depicts the comparison of the heights and weights for the ESRD adolescents and the healthy adolescents. Only one ESRD subject exceeded the height of the matched healthy adolescent. Nine of the 13 ESRD subjects were under five feet tall with one transplant subject being under four feet tall. All of the control subjects were five feet, three inches tall or more. Severe linear growth retardation has been reported by numerous groups studying ESRD patients who have undergone renal transplants or who were receiving chronic dialysis (Ferracis, et al., 1980; Stickler, 1976; Fine, et al., 1978; Scharer, et al., 1976). This problem of short stature has been considered by many investigators to be the major cause for the ERSD adolescent's poor body image and negative self-esteem (Lawson, 1976; Grushkin, 1973; Gilman & Frauman, 1979). These data indicate that one probable characteristic of the ESRD adolescent that contributes significantly to the lowered self-esteem and self-concept found in these adolescents in comparison to healthy adolescents is delayed physical growth resulting in short stature.

Review of Health History Data for Adolescents with ESRD

Health history data were obtained through interviews of each adolescent with ESRD by the investigator using the General Information

Sheet's Addendum for Adolescents with ESRD (Appendix E). These data are summarized in Tables 12 and 13.

There were very few consistent patterns in this health history information. Of course, all the adolescents had been diagnosed with ESRD and were receiving treatment in the form of a kidney transplant or chronic dialysis. The amount of time that these adolescents had been diagnosed with ESRD varied widely from 0.75 to 13 years. The majority of the adolescents with transplants (67%) had been on hemodialysis in the past for an average of 4.2 months though none of the transplant adolescents had ever received chronic peritoneal dialysis. Thus, experience with chronic hemodialysis was a part of the background of most of the adolescents with kidney transplants. In contrast, only one of the chronic dialysis subjects had ever received a renal transplant. This particular subject (CAPD-10) had received three kidney transplants, been on hemodialysis for 10 months in the past, and was on CAPD during the time of the study.

Another observation was that the transplant subjects had had their renal transplants anywhere from three months (.25 years) to 11.5 years (average of 4.9 years). The chronic dialysis subjects, in comparison, had been on their current mode of dialytic therapy only seven months (.58 years) to 2.83 years (average of 1.3 years). This potentially indicates that a renal transplant was the form of ESRD management that was more successful for long-lasting therapy.

Finally, it was also noted that all of the ESRD subjects had had a number of major surgical procedures performed in the past with an average of four per individual. These procedures resulted in scarring

at the incisional sites. This scarring has been suggested to have a negative impact on the adolescent's body image (Gilman & Frauman, 1979) and thus, contributes to a lowering of the adolescent's self-esteem and self-concept.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS FOR FURTHER RESEARCH

Summary

It was the intent of this study to examine the self-concept and self-esteem of chronically ill adolescents. Specifically, the study's purpose was to measure and compare the self-concept and self-esteem of healthy adolescents and adolescents with end-stage renal disease being treated by means of kidney transplantation or chronic dialysis.

The review of the literature supported the concept that any chronic illness, and particularly ESRD, has a negative effect on the self-concept and self-esteem of the adolescent. The chronically ill adolescent is unable to successfully complete all the developmental tasks of adolescence due to the effects of the illness and the medical treatment, and this results in a low self-concept and self-esteem. It was suggested that intervention based on an accurate assessment by health care personnel, especially nurses, could potentially assist the adolescent to accomplish some of the developmental tasks and lead to improved self-concept and self-esteem in the chronically ill adolescent.

The sample population studied were 13 adolescents with ESRD, ages 13 to 21 years; 9 who had renal transplants and 4 who were receiving chronic dialysis. All were being followed at the Oregon Health Sciences University. These subjects were each matched by sex and age (within three to six months) with selected healthy adolescents. The Coopersmith Self-Esteem Inventory and the Piers-Harris Children's Self-Concept Scale were administered. The scores obtained for each

assessment instrument by the ESRD subjects and the healthy controls were compared and analyzed using measures of central tendency and the Wilcoxon Matched-Pairs Signed-Ranks Test.

The Self-Esteem Inventory scores of the ESRD subjects were significantly lower than the scores of the healthy control subjects. The SEI scores of the transplant subjects as a subgroup were also significantly lower than the matched controls' scores. Though the mean score of the chronic dialysis subjects was considerably lower than the mean score of the matched controls, the Wilcoxon Test indicated that the difference between each pairs' scores was not statistically significant.

The Piers-Harris Self-Concept Scale indicated similar results to the SEI. The Piers-Harris scores of the ESRD group as a whole and the transplant subgroup were significantly lower than the scores of their respective matched control groups. The chronic dialysis subjects' Piers-Harris scores were not significantly lower than the scores of the matched healthy subjects.

Examination of the demographic data indicated that the adolescents with ESRD tended to be less advanced academically, more dependent on parents and family, and delayed in physical growth in comparison to the healthy adolescents.

Conclusions

Adolescents with ESRD exhibit a lower self-concept and self-esteem than healthy adolescents according to the results of this study. The group of adolescents with kidney transplants reported a lower self-concept and self-esteem than the healthy adolescents. Specific areas of self-esteem that were indicated as particularly significant to ESRD

adolescents were their social relationships with their peers and their school and academic performance. The group of adolescents that were receiving chronic dialysis reported a lower self-esteem but did not conclusively exhibit a lower self-concept. For these adolescents on chronic dialysis, the areas of social relationships, school performance, and parent and family relationships were significant.

The results of this study indicate that self-concept and self-esteem can be assessed by using the Self-Esteem Inventory and the Piers-Harris Self-Concept Scale. The findings that self-concept and self-esteem are lower in one group of chronically ill adolescents should alert health care professionals and encourage them to assess this problem and then plan interventions to aid chronically ill adolescents in the formation of an improved self-concept and self-esteem.

Recommendations for Further Research

The recommendations for further research derived from this study are aimed at obtaining a better understanding of the relationship between chronic illness and the self-concept and self-esteem developed by the adolescent. The following research activities are suggested:

1. Replicate this study using a larger sample population, particularly of adolescents receiving chronic dialysis.

2. Replicate this study matching the healthy control subjects more closely to the ESRD subjects in an attempt to control for extraneous variables that may have an effect on self-concept and self-esteem (i.e. socioeconomic level, living environment--rural versus urban, and family composition and stability).

3. Perform studies that examine the self-esteem and self-concept of other groups of chronically ill adolescents (i.e., cystic fibrosis, diabetes mellitus, cancer) using the Coopersmith Self-Esteem Inventory and the Piers-Harris Self-Concept Scale. Compare the findings of these proposed studies to the results of this research endeavor.

4. Perform a longitudinal study of young adolescents with ESRD that are followed through adulthood examing changes in their self-concept and self-esteem.

5. Perform a study that examines the quality of interaction between chronically ill adolescents and the nurses involved in their care, and then explore the influence these interactions have on the development of self-esteem and self-concept by these adolescents.

6. Perform a study that examines the quality and quantity of interactions between chronically ill adolescents and their family members, and then explore the influence these interactions have on the development of self-esteem and self-concept by these adolescents.

REFERENCES

Advisory Committee to the Renal Transplant Registry. The ninth report of the human renal transplant registry. Journal of the American Medical Association, 1972, 220(2), 253-260.

Alexander, S. R., Tseng, C. H., Maksym, K. A., Campbell, R. A., & Talwalkar, Y. B. Clinical parameters in CAPD for infants and children. In J. Moncrief and R. Popovich (Eds.), CAPD update: Proceedings of the Second International Conference on CAPD. New York: Masson Publishing, 1981.

Anyan, W. R. Adolescent medicine in primary care. New York: John Wiley, 1978.

Balfe, J. W., Irwin, M., & Oreopoulos, D. G. An assessment of CAPD in children. In J. Moncrief and R. Popovich (Eds.), CAPD update: Proceedings of the Second International Conference on CAPD. New York: Masson Publishing, 1981.

Boulton-Jones, J. M., Cameron, J. S., Bedwick, M., Ogg, C. S., Meadow, S. R., & Ellise, F. G. Treatment of terminal renal failure in children by home dialysis and transplantation. Archives of Diseases in Childhood, 1971, 46, 457-464.

Brehm, J. W., & Cohen, A. R. Explorations in cognitive dissonance. New York: Wiley, 1962.

Burton, H. J., Conley, J., Lindsay, R. M., Wai, L., & Richmond, J. M. Adaptation to CAPD: Psychological factors. In G. M. Gahl, M. Kessel, & K. D. Nolph (Eds.), Advances in peritoneal dialysis: Proceedings of the Second International Symposium on Peritoneal Dialysis. Amsterdam: Excepta Medica, 1981.

Calkins, M. W. The self in scientific psychology. American journal of psychology (vols.). New York: H. Holt, 1890.

Clifford, E. Body satisfaction in adolescents. Perceptual and motor skills, 1971, 33, 119-125.

Cole, L., & Hall, I. N. Psychology of adolescents. New York: Holt, Rinehart & Winston, 1970.

Connell, D. M., & Johnson, J. E. Relationships between sex-role identification and self-esteem in early adolescents. Developmental Psychology, 1970, 3(2), 268.

Coopersmith, S. A. A method of determining types of self-esteem. Journal of Abnormal Social Psychology, 1959, 59, 87-94.

Coopersmith, S. A. The antecedents of self-esteem. San Francisco: W. H. Freeman, 1967.

Coopersmith, S. A. Coopersmith self-esteem inventory. Palo Alto: Consulting Psychologists Press, Inc., 1975.

Cox, S. H. Family background effects on personality development and social acceptance. Unpublished doctoral dissertation, Texas Christian University, 1966. Summarized in: Peer acceptance-rejection and personality development, Project N. OE 5-0417, Contract No. OE 2-10-05: U. S. Department of Health, Education and Welfare.

Crandall, R. In J. P. Robinson & P. R. Shaver (Eds.), Measures of social and psychological attitudes. Ann Arbor: University of Michigan Press, 1973.

Donaldson, T. S. Affective testing in the Alum Rock Voucher schools. Rand Corporation, 1974.

Downie, N. M., & Heath, R. W. Basic statistical methods. New York: Harper & Row, 1965.

Eastman, E. The relationship between self-concept and intelligence in children. Unpublished research paper, Whitworth College, Spokane, Washington, 1965.

Edelmann, C. M., & Barnett, H. L. Pediatric nephrology. In M. B. Strauss & L. G. Welt (Eds.), Diseases of the kidney (Vol. II). Boston: Little, Brown and Company, 1971.

Farls, R. Unpublished data recieved from Freedom Area School District, Freedom, Pennsylvania, 1966.

Ferracis, J., Saenger, P., Levine, L., New, M., Pang, S., Saxena, B. B., & Lewy, J. E. Delayed puberty in males with chronic renal failure. Kidney International, 1980, 18, 344-350.

Fine, R. N., Malekzadeh, M. H., Pennisi, A. J., Ettenger, R. B., Vittenbogaart, C. H., Negrete, V. F., & Korsch, B. M. Long-term results of renal transplantation in children. Pediatrics, 1978, 61(4), 641-650.

Flammer, D. P., & Matas, L. An exploratory investigation of three self-orientation measures. Journal of personality assessment, 1972, 36, 447-450.

Frauman, A. C., & Sypert, N. S. Sexuality in adolescents with chronic illness. The American Journal of Maternal-Child Nursing, 1979, 4, 371-375.

Fullerton, W. S. Self-disclosure, self-esteem, and risk taking: A study of their convergent and discriminant validity in elementary school children. Ph.D. Dissertation, University of California, Berkeley, 1972.

Gilman, C. M., & Frauman, A. C. Psychosocial care of the child in renal failure. Journal of the American Association of Nephrology Nurses and Technicians, 1979, 6(3), 143-148.

Gonzalez, L. L., Martin, L., & West, C. D. Renal homotransplantation in children. Archives of Surgery, 1970, 101, 232-236.

Grushkin, C. M., Korsch, B. M., & Fine, R. N. The outlook for adolescents with chronic renal failure. Pediatric Clinics of North America, 1973, 20(4), 953-963.

Guardo, C. J. Unpublished data from Denver, Colorado, public schools, 1966.

James, W. Principles of psychology (2 vols.). New York: H. Holt, 1890.

Jelneck, L. J. The special needs of the adolescent with chronic illness. The American Journal of Maternal Child Nursing, 1977, 2(1), 57-61.

Jennison, M. The pediatrician and the care of chronic illness. Pediatrics, 1976, 58, 5-7.

Jersild, A. T. In search of self. New York: Teachers College, Columbia University, 1952.

Jersild, A. T., Brook, J. S., & Brook, D. W. The psychology of adolescence. New York: Macmillan Publishing, 1978.

Kaplan De-Nour, A. Adolescents' adjustment to chronic hemodialysis. American Journal of Psychiatry, 1979, 136(4A), 430-432.

Ketchum, W., & Morse, W. C. Dimensions of children's social and psychological development related to school achievement. Cooperative research project No. 1286, Office of Education, Dept. of HEW. University of Michigan, Ann Arbor, Michigan, 1965.

Kimball, O. Development of norms for the Coopersmith Self-esteem Inventory: Grades four through eight. Unpublished doctoral dissertation, Northern Illinois University, 1972.

Korsch, B. M., Negrete, V. F., Gardner, J. E., Weinstock, C. L., Mercer, A. S., Grushkin, C. M., & Fine, R. N. Kidney transplantation in children: Psychosocial follow-up study on child and family. The Journal of Pediatrics, 1973, 83(3), 399-408.

Lawson, R. K., Murphy, J. B., & Talwalkar, Y. B. Special problems in pediatric renal transplant. Urology Clinics of North America, 1976, 3(3), 667-684.

Levy, P. R., & Hurley, J. D. Chronic renal insufficiency. Pediatric Clinics of North America, 1976, 23(4), 829-842.

Lipsitt, L. P. A self-concept scale for children and its relation to the children's form of the manifest anxiety scale. Child Development, 1958, 29, 463-472.

Lourie, R. S. Psychology of adolescence. In J. R. Gallagher, F. P. Heald, & D. C. Garell (Eds.), Medical care of the adolescent. New York: Appleton-Century-Crofts, 1976.

Magrab, P. R., & Papadopoulou, Z. L. Renal disease. In P. R. Magrab (Ed.), Psychological management of pediatric problems (Vol. I). Baltimore: University Park Press, 1978.

Malekzadeh, M. H., Pennisi, A. J., Vittenbogaart, C. H., Korsch, B. M., Fine, R. M., & Main, M. E. Current issues in pediatric renal transplantation. Pediatric Clinics of North America, 1976, 2(4), 857-872.

Maksym (Nelson), K. A., Alexander, S. R., Tseng, C. H., & Talwalkar, Y. B. A CAPD training program for young children. Unpublished report, 1980.

Many, M. The relationship between anxiety and self-esteem in grades 4 through 8. Doctoral dissertation, 1973.

Matteson, R. Adolescent self-esteem, family communication and satisfaction. Journal of Psychology, 1974, 86, 35-47.

Mattson, A. Long-term illness in childhood: A challenge to psychosocial adaptation. Pediatrics, 1972, 50(5), 801-811.

Mead, G. H. Mind, self and society. Chicago: University of Chicago Press, 1934.

Meissner, A. L., Throeson, R. W., & Butler, A. J. The relationship of self-concept to the impact and the obviousness of disability among male and female adolescents. Perceptual and Motor Skills, 1967, 24, 1099-1105.

Michael, J. J., Plass, A., & Lee, Y. B. A comparison of the self-report and the observed report in the measurement of the self-concept: Implications for construct validity. Educational and Psychological Measurement, 1973, 33, 433-439.

Millen, L. The relationship between self-concept, social desirability, and anxiety in children. Unpublished M.Sc. thesis, the Pennsylvania State University, 1966.

Moel, D. I. The clinical manifestations of renal failure in childhood. In E. A. Friedman (Ed.), Strategy in renal failure. New York: John Wiley & Sons, 1978.

Nicholson, S. W. Growth and development. In J. Howe (Ed.), Nursing care of adolescents. New York: McGraw-Hill Co., 1980.

Owens, T. R., & Gustafson, R. A comparison of self-esteem levels of Mexican-American and non-Mexican American children in grades three, six and nine. Paper presented at meeting of American

Psychological Assoication, September 5, 1971, Washington, D.C.

Pang, B. Y. A comparison of body image and self-esteem of normal adolescents and adolescents who have undergone renal transplantation. Unpublished masters thesis, University of Oregon Health Sciences Center, School of Nursing, 1975.

Phillips, D. S. Basic statistics for health science students. San Francisco: Witt Freeman, 1978.

Piers, E. V. Children's self-rating and rating by others. Unpublished paper, 1965.

Piers, E. V., & Harris, D. B. Age and other correlates of self-concept in children. Journal of Educational Psychology, 1964, 55(2), 91-95.

Piers, E. V. Manual for the Piers-Harris Children's Self-Concept Scale (The Way I Feel About Myself). Nashville: Counselor Recordings and Tests, 1970.

Poznanski, E. O., Miller, E., Salguero, C., & Kelsh, R. C. Quality of life for long-term survivors of end-stage renal disease. The Journal of the American Medical Association, 1978, 239(22), 2343-2347.

Rogers, C. R. Client-centered therapy. Boston: Houghton Mifflin, 1951.

Rogers, C. R., & Dymond, R. F. (Eds.), Psychotherapy and personality change: Coordinated studies in the client-centered approach. Chicago: University of Chicago Press, 1954.

Rosenberg, M. Society and the adolescent self-image. New Jersey: Princeton University Press, 1965.

Rubin, R. Body image and self-esteem. Nursing Outlooks, 1968, 16, 20-23.

Scharer, K., Chantler, C., Brunner, F. P., Gruland, H. J., Jacobs, D., Parsons, F. M., Seyfert, G., & Wing, A. J. Dialysis and renal transplantation of children in Europe, 1974. Acta Pediatr Scand, 1976, 65, 657-662.

Schwab, J. J., & Harmeling, J. D. Body image and medical illness. Psychosomatic medicine, 1968, 30(1), 51-61.

Secord, P. F., Jourard, S. M. The appraisal of body-cathexis: Body-cathexis and the self. Journal of Consulting Psychology, 1953, 17, 343-347.

Shmerling, J., Kohaut, E., & Perry, S. Cost and social benefits of CAPD in a pediatric population. In J. Moncrief & R. Popovich (Eds.), CAPD update: Proceedings of the Second International Conference on CAPD. New York: Masson Publishing, 1981.

Simon, W. Some sciometric evidence for validity of Coopersmith's Self-esteem Inventory. Perceptual and Motor Skills, 1972, 34, 93-94.

Simon, W. E., & Bernstein, E. The relationship between self-esteem and perceived reciprocal liking: A sociometric test of the theory of cognitive balance. Journal of Psychology, 1971, 79, 197-201.

Sorrels, A. J., Mullins-Blackson, C., & Moncrief, J. W. The quality of the life of the CAPD patient. In J. Moncrief & R. Popovich (Eds.), CAPD update: Proceedings of the Second International Conference on CAPD. New York: Masson Publishing, 1981.

Spatz, D. C., & Johston, J. O. Internal consistency of the Coopersmith Self-esteem Inventory. Education and Psychological Measurement, 1973, 33, 875-876.

Steinhauer, P. D., Mushin, D. N., & Rae-Grant, Q. Psychosocial aspects of chronic illness. Pediatric Clinics of North America, 1974, 22(4), 825-840.

Steele, S. General ideas in relation to long-term illness in childhood. In S. Steel (Ed.), Nursing care of the child with long-term illness. New York: Appleton-Century-Crofts, 1977.

Stickler, G. B. Growth failure in renal disease. Pediatric Clinics of North America, 1976, 23(4), 885-894.

Strodtbeck, F. L. Tutoring and growth: A report on the neighborhood youth corps tutoring project prepared for the National Commission on Resources for Youth. University of Chicago, 1972.

Trowbridge, N. Self-concept and socioeconomic status in elementary school children. American Education Research Journal, 1972, 9, 525-537.

Udelman, D. L. Chronic illness treatment and self-concept. Arizona Medicine, 1979, 36(9), 684-685.

Waechter, E. H. The adolescent with handicapping chronic or life-threatening illness. In R. T. Mercer (Ed.), Perspectives on adolescent health care. New York: J. B. Lippincott, 1979.

Watson, E. J., & Johnson, A. M. The emotion significance of acquired physical disfigurement in children. The American Journal of Orthopsychiatry, 1958, 28, 85-97.

Williams, G. S., Klenk, E. L., & Winters, P. W. Acute renal failure in pediatrics. In R. W. Winters (Ed.), The body fluids in pediatrics. Boston: Little, Brown and Company, 1973.

Wing, S. W. A study of children whose reported self-concept differs from classmates' evaluations of them. Unpublished Ph.D. dissertation, University of Oregon, 1966.

Wolfish, M. G., & McLean, J. A. Chronic illness in adolescents. Pediatric Clinics of North America, 1974, 21(4), 1043-1049.

Wylie, R. C. The present status of self-theory. In E. F. Borgatta & W. W. Lambert (Eds.), Handbook of personality theory and research. Chicago: Rand McNally, 1968.

Wylie, R. C. The self-concept. Lincoln: University of Nebraska Press, 1961.

Zahran, H. A. The self-concept in the psychological guidance of adolescents. The British Journal of Educational Psychology, 1967, 37, 225-240.

APPENDIX A

Consent Form For Human Research

Oregon Health Sciences University

School of Nursing

Informed Consent Form

Subject's Name: _____ Date: _____

This is a study entitled "A Comparison Study of Self-Concept and Self-Esteem in Normal Adolescents and Adolescents with End-Stage Renal Disease Being Treated by means of Kidney Transplantation or Chronic Dialysis," being conducted by Kristine A. Nelson, R.N., B.S.N. under the supervision of Charold L. Baer, R.N., Ph.D. The purpose of this study is to explore the self-esteem and self-concept of adolescents that are healthy and those who have kidney failure requiring either a kidney transplant or chronic dialysis. It requires my completing the following three questionnaires: Coopersmith Self-Esteem Inventory, the Piers-Harris Self-Concept Scale and a General Information Sheet.

I have been informed as to the exact nature of the tasks expected of me during this investigation. This includes answering the questions that compose the three written questionnaires listed above. It will take approximately 30 minutes to complete each of these questionnaires. All information obtained will be handled confidentially and will be used only for scientific publication or in professional teaching programs.

I will not directly benefit from the study, but it is hoped that the knowledge gained from it will be helpful in the understanding and treatment of adolescents who have kidney failure as well as adolescents in general.

Kristine A. Nelson, R.N. has agreed to answer any questions that I may have.

I understand I may refuse to participate, or withdraw from this study at any time without affecting my relationship with, or treatment at the Oregon Health Sciences University.

I have read the foregoing and agree to participate in this study.

_____

Subject's signature

_____

Parent (or Guardian)

_____

Witness

APPENDIX B

Coopersmith Self-Esteem Inventory

Form A-58 Items

		Like Me	Unlike Me
1.	I spend a lot of time daydreaming.	___	___
2.	I'm pretty sure of myself.	___	___
3.	I often wish I were someone else.	___	___
4.	I'm easy to like.	___	___
5.	My parents and I have a lot of fun together.	___	___
6.	I never worry about anything.	___	___
7.	I find it very hard to talk in front of the class.	___	___
8.	I wish I were younger.	___	___
9.	There are lots of things I'd change about myself if I could.	___	___
10.	I can make up my mind without too much trouble.	___	___
11.	I'm a lot of fun to be with.	___	___
12.	I get upset easily at home.	___	___
13.	I always do the right thing.	___	___
14.	I'm proud of my school work.	___	___
15.	Someone always has to tell me what to do.	___	___
16.	It takes me a long time to get used to anything new.	___	___
17.	I'm often sorry for the things I do.	___	___
18.	I'm popular with kids my own age.	___	___
19.	My parents usually consider my feelings.	___	___
20.	I'm never unhappy.	___	___
21.	I'm doing the best work that I can.	___	___
22.	I give in very easily.	___	___
23.	I can usually take care of myself.	___	___
24.	I'm pretty happy.	___	___
25.	I would rather play with children younger than I am.	___	___

		Like Me	Unlike Me
26.	My parents expect too much of me.	___	___
27.	I like everyone I know.	___	___
28.	I like to be called on in class.	___	___
29.	I understand myself.	___	___
30.	It's pretty tough to be me.	___	___
31.	Things are all mixed up in my life.	___	___
32.	Kids usually follow my ideas.	___	___
33.	No one pays much attention to me at home.	___	___
34.	I never get scolded.	___	___
35.	I'm not doing as well in school as I'd like to.	___	___
36.	I can make up my mind and stick to it.	___	___
37.	I really don't like being a boy-girl.	___	___
38.	I have a low opinion of myself.	___	___
39.	I don't like to be with other people.	___	___
40.	There are many times when I'd like to leave home.	___	___
41.	I'm never shy.	___	___
42.	I often feel upset in school.	___	___
43.	I often feel ashamed of myself.	___	___
44.	I'm not as nice looking as most people.	___	___
45.	If I have something to say, I usually say it.	___	___
46.	Kids pick on me very often.	___	___
47.	My parents understand me.	___	___
48.	I always tell the truth.	___	___
49.	My teacher makes me feel I'm not good enough.	___	___
50.	I don't care what happens to me.	___	___
51.	I'm a failure.	___	___

		Like Me	Unlike Me
52.	I get upset easily when I'm scolded.	___	___
53.	Most people are better liked than I am.	___	___
54.	I usually feel as if my parents are pushing me.	___	___
55.	I always know what to say to people.	___	___
56.	I often get discouraged at school.	___	___
57.	Things usually don't bother me.	___	___
58.	I can't be depended on.	___	___

Here are a set of statements. Some of them are true of you and so you will circle the yes. Some are not true of you and so you will circle the no. Answer every question even if some are hard to decide, but do not circle both yes and no. Remember, circle the yes if the statement is generally like you or circle the no if the statement is generally not like you. There are no right or wrong answers. Only you can tell us how you feel about yourself, so we hope you will mark the way you really feel inside.

1.	My classmates make fun of me.	Yes	No
2.	I am a happy person.	Yes	No
3.	It is hard for me to make friends.	Yes	No
4.	I am often sad.	Yes	No
5.	I am smart.	Yes	No
6.	I am shy.	Yes	No
7.	I get nervous when the teacher calls on me.	Yes	No
8.	My looks bother me.	Yes	No
9.	When I grow up, I will be an important person.	Yes	No
10.	I get worried when we have tests in school.	Yes	No
11.	I am unpopular.	Yes	No
12.	I am well behaved in school.	Yes	No
13.	It is usually my fault when something goes wrong.	Yes	No
14.	I cause trouble to my family.	Yes	No
15.	I am strong.	Yes	No
16.	I have good ideas.	Yes	No
17.	I am an important member of my family.	Yes	No
18.	I usually want my own way.	Yes	No
19.	I am good at making things with my hands.	Yes	No
20.	I give up easily.	Yes	No
21.	I am good at my school work.	Yes	No
22.	I do many bad things.	Yes	No
23.	I can draw well.	Yes	No

24.	I am good in music.	Yes	No
25.	I behave badly at home.	Yes	No
26.	I am slow finishing my school work.	Yes	No
27.	I am an important member of my class.	Yes	No
28.	I am nervous.	Yes	No
29.	I have pretty eyes.	Yes	No
30.	I can give a good report in front of the class.	Yes	No
31.	In school I am a dreamer.	Yes	No
32.	I pick on my brother(s) and sister(s).	Yes	No
33.	My friends like my ideas.	Yes	No
34.	I often get into trouble.	Yes	No
35.	I am obedient at home.	Yes	No
36.	I am lucky.	Yes	No
37.	I worry a lot.	Yes	No
38.	My parents expect too much of me.	Yes	No
39.	I like being the way I am.	Yes	No
40.	I feel left out of things.	Yes	No
41.	I have nice hair.	Yes	No
42.	I often volunteer in school.	Yes	No
43.	I wish I were different.	Yes	No
44.	I sleep well at night.	Yes	No
45.	I hate school.	Yes	No
46.	I am among the last to be chosen for games.	Yes	No
47.	I am sick a lot.	Yes	No
48.	I am often mean to other people.	Yes	No
49.	My classmates in school think I have good ideas.	Yes	No
50.	I am unhappy.	Yes	No
51.	I have many friends.	Yes	No
52.	I am cheerful.	Yes	No

53.	I am dumb about most things.	Yes	No
54.	I am good looking.	Yes	No
55.	I have lots of pep.	Yes	No
56.	I get into lots of fights.	Yes	No
57.	I am popular with boys.	Yes	No
58.	People pick on me.	Yes	No
59.	My family is disappointed in me.	Yes	No
60.	I have a pleasant face.	Yes	No
61.	When I try to make something, everything seems to go wrong.	Yes	No
62.	I am picked on at home.	Yes	No
63.	I am a leader in games and sports.	Yes	No
64.	I am clumsy.	Yes	No
65.	In games and sports, I watch instead of play.	Yes	No
66.	I forget what I learn.	Yes	No
67.	I am easy to get along with.	Yes	No
68.	I lose my temper easily.	Yes	No
69.	I am popular with girls.	Yes	No
70.	I am a good reader.	Yes	No
71.	I would rather work alone than with a group.	Yes	No
72.	I like my brother (or sister).	Yes	No
73.	I have a good figure.	Yes	No
74.	I am often afraid.	Yes	No
75.	I am always dropping or breaking things.	Yes	No
76.	I can be trusted.	Yes	No
77.	I am different from other people.	Yes	No
78.	I think bad thoughts.	Yes	No
79.	I cry easily.	Yes	No
80.	I am a good person.	Yes	No

APPENDIX D

General Information Sheet

General Information Sheet

1. Birthdate: _____ 2. Age: _____ 3. Today's date: _____

4. Highest grade in school finished (circle one):

   7 8 9 10 11 12 13 14 15 16
   junior high/high school college

5. Name of school you are now attending: _____

6. Sex (circle one): Male Female

7. List the city and state where you live: _____ (city), _____ (state)

8. Whom do you live with? (circle all appropriate people):

   Alone Mother Father Stepmother Stepfather

9. For the people listed below, please indicate how many live with you at the present time:

   _____ Roomate(s) _____ Brother(s) _____ Sister(s) _____ Other relatives _____ Others

10. Current height (inches) _____

11. Current weight (pounds) _____

12. Are you working? (circle one): Yes No

    If yes, please list name of place employed: _____

    Type of work you do _____

    Hours worked per week _____

13. Please list the number of brother(s) or sister(s) you have and their ages:

    Number of brother(s): _____ Their ages: _____

    Number of sister(s): _____ Their ages: _____

14. Have you ever had a long-lasting (chronic) illness and/or a physical disability? (circle one): Yes No

15. Are you being treated for a long-lasting illness and/or physical disability at this time? (circle one): Yes No

16. If you have a long-lasting illness, please list the name of it:

    _____

APPENDIX E

General Information Sheet

Addendum for Adolescents with ESRD

General Information Sheet

Addendum for Adolescents with ESRD

1. What is the name of your kidney disease? _____

2. How old were you when your kidney disease was discovered? _____

3. How old were you when your original kidneys first failed? _____

4. Have you ever been on hemodialysis (i.e., the kidney machine)?
   (circle one): Yes No
   If yes:
   Where did you have dialysis? _____
   How old were you when you were started on hemodialysis? ____
   How long were you on hemodialysis? _____

5. Have you ever been on peritoneal dialysis and/or CAPD?
   (circle one): Yes No
   If yes:
   Where did you have peritoneal dialysis? _____
   How old were you when you started peritoneal dialysis? _____
   How long were you on peritoneal dialysis? _____

6. Are you on chronic dialysis now? (circle one): Yes No
   If yes:
   List the name of the dialysis you are on now: _____
   Where is your dialysis being done? (circle one):
   Home OHSU Dialysis Unit

7. Have you ever had a kidney transplant? (circle one): Yes No
   If yes:
   How many transplants have you had? _____
   How old were you when you had your transplant(s)? _____
   Where did the kidney for your transplant(s) come from?
   (circle one): cadaver mother father
   sister brother other
   Have you had your transplanted kidney(s) removed?
   (circle one): Yes No
   How old were you when your transplanted kidney(s) were
   removed? _____

8. Do you have a transplanted kidney now that is functioning without dialysis? (circle one): Yes No

9. Have you had any other major surgeries? (circle all that are correct):
   Original kidneys removed? Spleen removed? Parathyroid glands removed?
   Hemodialysis shunt or fistula placement? If yes, how many? _____
   Tenckhoff peritoneal catheter placement? If yes, how many? _____
   Other surgeries (please list): _____

APPENDIX F

Mean Scores for the Coopersmith Self-Esteem Inventory

Mean Scores for the Coopersmith

Self-Esteem Inventory

Normative Data

INVESTIGATOR	AGE OR GRADE	MEAN SCORE	MALES, MEAN SCORE	FEMALES, MEAN SCORE
Coopersmith, 1967	9-15 years	71.2	72.2	70.1
	16-23 years	76.1	76.1	76.1

Research Studies

INVESTIGATOR	N	AGE OR GRADE	MEAN SCORE	MALES, MEAN SCORE	FEMALES, MEAN SCORE
Donaldson, 1974	643	Grade 3-8	63.8	64.8	63.5
Ketcham & Morse, 1965	484	Grades 3, 5, 7, 9, 11	57.3	57.3	57.3
Strodtbeck, 1972	321	14-17 years	74.9	73.6	76.2
Trowbridge, 1972	3,789	8-14 years	71.4	70.8	71.9
Owen & Gustafson, 1971	400+	Grades 3, 6, 9	61.7	-	-
Simon & Bernstein, 1971	129	11-12 years	70.0	70.4	69.6

APPENDIX G

Mean Scores for the Piers-Harris Self-Concept Scale

Mean Scores for the Piers-Harris

Self-Concept Scale

Normative Group

SAMPLE	AGE OR GRADE	N	MEAN SCORE
Small town, Pennsylvania Public School Children (Millen, 1966)	Grade 4	275	47.79
	Grade 6	265	55.36
	Grade 8	231	52.04
	Grade 10	221	49.67
	Grade 12	191	54.56

Research Studies

SAMPLE	AGE OR GRADE	N	MEAN SCORE
Small town, Pennsylvania Public Schools (Piers, 1965)	Grade 4	111	60.40
	Grade 6	113	54.09
Spokane Public Schools (Eastman, 1965)	Grades 5, 6	36	55.94
Denver Public Schools (Guardo, 1966)	Grade 6	111	58.35
East Pennsylvania School (Farls, 1966)	Grade 6	207	52.70

AN ABSTRACT OF THE THESIS OF

KRISTINE A. NELSON

For the MASTER OF NURSING

Date of Receiving this Degree: June 10, 1983

Title: A COMPARISON STUDY OF SELF-CONCEPT AND SELF-ESTEEM IN NORMAL ADOLESCENTS AND ADOLESCENTS WITH END-STAGE RENAL DISEASE BEING TREATED BY MEANS OF KIDNEY TRANSPLANTATION OR CHRONIC DIALYSIS

Approved: _____

Charold Baer, R.N., Ph.D., Professor, Thesis Advisor

This study was an explorative, correlational investigation of the effects of chronic illness on the self-concept and self-esteem of the adolescent. The specific chronic illness studied was end-stage renal disease (ESRD) that was being treated by either kidney transplantation or chronic, out-patient dialysis. The independent variable was the type of treatment the adolescent with ESRD was receiving (transplantation or dialysis) and the dependent variables were self-concept and self-esteem. It was hypothesized that adolescents with ESRD being treated by means of transplantation or chronic dialysis would tend to report a less adequate (lower) self-concept and a lower self-esteem than healthy adolescents. The sample population consisted of 13 ESRD subjects; 9 with renal transplants and 4 receiving dialysis. This population was obtained from adolescent ESRD patients who were Oregon or southwestern Washington residents and were receiving care via the Oregon Health Sciences

University's Renal Transplant Clinic, the Home Continuous Ambulatory Peritoneal Dialysis Program, or the Hemodialysis Unit. The control subjects consisted of healthy adolescents from the Portland, Oregon community that were matched to the ESRD subjects by sex and age (within 3 to 6 months). All subjects were initially screened according to the selection criteria, and then asked to participate in the study. Appropriate written consent was obtained. The two instruments used for data collection were the Coopersmith Self-Esteem Inventory and the Piers-Harris Children's Self-Concept Scale. Both of the instruments are self-report questionnaires that ask the subjects to respond either positively or negatively to statements that reflect the way individuals feel about themselves (i.e., self-concept and self-esteem). Demographic data were obtained using a study specific General Information Sheet. Health history information about the ESRD subjects was obtained using an Addendum for Adolescents with ESRD. The data were analyzed using descriptive statistics and the Wilcoxon Matched-Pairs Signed-Ranks Test. The analysis revealed that adolescents with ESRD, and specifically adolescents with kidney transplants, tended to report a lower self-concept and self-esteem than healthy adolescents. Though three of the four chronic dialysis subjects displayed a lower self-concept and self-esteem than the matched healthy control subjects, this difference was not statistically significant. It was the goal of this study to add to the general knowledge base concerning the nature of the relationship between chronic illness and the self-concept and self-esteem of adolescents. Health care personnel, especially nurses, can utilize the data derived from this study to assess self-concept and self-esteem in chronically ill adolescents and to plan, implement and evaluate care aimed at helping adolescents who have disturbances in these areas.