

A COMPARISON OF BODY IMAGE AND SELF-ESTEEM OF NORMAL
ADOLESCENTS AND ADOLESCENTS WHO HAVE UNDERGONE RENAL
TRANSPLANTATION

by

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A Field Study


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b.y.p.

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CHAPTER I

Introduction

The general problem with which the present study is concerned is the relationship of body-image to self-esteem. It is here assumed that these two perceptions of the individual are intimately associated. One might expect, then, that if the body is a source of satisfaction and pride, the individual will enjoy high self-esteem; and that if the body is an object of mortification and disappointment, the individual will suffer low self-esteem.

While such a generalization seems reasonable, it remains a question as to whether body-image and self-esteem are isomorphic. It is possible for an individual to perceive himself as physically ugly or inadequate, and yet believe himself to possess other fine qualities such as a strong intellect, pleasing personality, artistic skill, and loyalty. Under such circumstances, he might experience considerable self-satisfaction. Conversely an individual may be pleased with his physical appearance and functioning, but be deeply dissatisfied with himself. Nevertheless, the general tendency would appear to be that a pleasing body and self-esteem are positively and significantly correlated.

Accepting for the moment the truth of this assertion, then it might further be argued that illnesses or conditions which adversely affect the individual's perceptions of his body also affect adversely his

self-esteem. In the case of temporary or minor illnesses or disabilities, the negative effects on body-image and self-image may be minimal, of short duration, and reversible. In the case of long-term or permanent disabilities or chronic illnesses, the effects may be devastating, even to the point of producing permanent discontent and low self-esteem.

Thus, the extent to which health and physical normality or abnormality affect body-image and self-image would seem to vary according to the type of problem experienced, and its severity and duration. In addition, other factors may affect body-image and self-esteem and may alter the interrelationship between the two. Prominent among these other factors are sex and age. It has been claimed that in our culture, females tend to exhibit a greater preoccupation with their bodies than do males. Hence, it might be hypothesized that females would express greater dissatisfaction with their bodies when physical problems arise than would males. Sex may also affect self-esteem and it could be reasoned that in view of the generally lower status of females than of males in our society, females might generally manifest lower self-esteem than males. However, present evidence as to the validity of these hypotheses is inconclusive.

With respect to age, it might be argued that certain stages of life are marked by greater concern with physical characteristics and capabilities than other stages. In some periods of the life cycle, the body-image may occupy a more central position and com-

prise a proportionately larger component of the total self-image of the individual than in other periods. Adolescence is presumably such a stage of life. Concern with physical qualities and sensitivity to perceived physical defects may constitute a significant element in the identity crisis so frequently occurring at that time (Erikson, 1950). If this reasoning is valid, then illnesses and physical disabilities should evoke particularly strong psychological reactions in adolescents and exert a strong influence on their body-images and perhaps their self-esteem.

It is the purpose of the present investigation to explore the interrelations of body image, self image, and self-esteem for a group of adolescents who have received kidney transplants. Such patients, prior to transplant, have usually experienced many physical problems from renal failure, not only in the genito-urinary system but in other bodily systems as well, such as the cardiovascular, neuro-muscular, and skeletal systems. For almost all these patients, renal dysfunction causes clinical signs and symptoms such as fatigue, headaches, nausea, vomiting, dry skin, a swollen face and puffy eyelids, edematous hands and feet, paleness, and a generally deteriorated physical appearance. If the renal problem had commenced before physical growth had been completed, then the patient might also manifest dwarfism and failure of normal sexual development.

Kidney transplantation can sometimes correct renal dysfunctioning, and is often the favored treatment for restoring the individual to his normal activities of daily living. For adolescents,

a survival rate of 73.3 percent over a 12-month period has been reported (Lilly, Giles, Hurwitz, Schroter, Takagi, Gray, Penn, Halgrimson, & Starzl, 1971). However, continual immunosuppressive therapy is usually required to prevent rejection of the transplanted organ, and this therapy in itself frequently produces toxic effects and alterations in physical appearance (Blodgett, Burgin, Iezzoni, Gribetz, & Talbot, 1956; Bravo, Herman, & Smyth, 1967; Grushkin, Korsch, & Fine, 1973). Thus, steroids may produce acne, a Cushnoid appearance, weight gain, general edema, stunted growth, muscle weakness, osteoporosis and osteomalacia, hirsutism, striae, and cataracts. It would appear, then that significant physical problems remain even for those who have completed successful transplant surgery. How do adolescents react psychologically to these physical changes and problems?

Few studies have been conducted which have examined the attitudes, thoughts or reactions of kidney transplant patients to changes in their bodies; and of these only one has focused on the body-image perceptions of adolescents (Korach, Negrete, Gardner, Weinstock, Mercer, Grushkin, & Fine, 1972). The present study seeks to add to the knowledge of the psychological impact on adolescents of renal failure and kidney transplant.

In the review of the literature to follow, first the relations of body-image to the self-concept and self-esteem will be examined; then the relation of chronic illnesses or disabilities to body-image and to self-esteem will be considered; and finally such research

will be summarized as has suggested differences between the sexes in perception of body and of self, and in the effects of chronic conditions on these perceptions.

Review of the Literature

Body-Image, Self-Concept and Self-Esteem

The concept of "body-image" is difficult to trace historically since it has foundations in a diverse number of disciplines. Around 1920, Henry Head, a British neurologist, became one of the first persons to formulate a generalized theory concerning body image. Since that time a small but steady flow of articles has continued to explore the perceptions of the body held by varying segments of the population such as males and females, adults and adolescents, psychiatric patients and "normal" individuals. Assessment of body-image has been based on interviews (MacGregor, Abel, Bryt, Lauer, & Weissmann, 1953; Sutherland, Orbach, Dyk, & Bard, 1952), observations of posture, gait, dress, and speech (Bennet, 1956; Compton, 1964; Head, 1926; McCurdy, 1948), estimates of body size and shape (Cleveland, Fisher, Reitman, & Rothaus, 1962; Dillon, 1962a, 1962b; Woods & Cook, 1954) and proprioceptive orientation of body parts (Bender, Green & Fink, 1954; Harber, 1955). Other means of assessment have also been used, such as the Draw-A-Person Test (Abel, 1953; Bender & Keeler, 1952; Berman & Laffal, 1953; Machover, 1953), and the Rorschach Barrier Scores (Fisher & Cleveland, 1958). Such projective techniques, however, provide data which prove difficult to interpret, and hence tend to be unreliable. In 1953, Secord and Jourard developed a scale (BC-SC) to measure both body- and self-cathexis. The Body-Cathexis section of this scale

appraised body image in a more reliable manner than did the previously mentioned projective measures in that responses were elicited from subject regarding their attitudes to specific parts and functions of the body. The Secord and Jourard approach has been utilized with some alteration by a number of investigators in the sixties and seventies. Recently Clifford (1971) modified the BC scale to make it more applicable to the situation of adolescents. These studies will be described in greater length below.

The general rationale for assessing body image has been to determine how such perceptions affect (and are affected by) personality variables. Thus, some studies have attempted to correlate satisfaction or dissatisfaction with the body with general self-satisfaction, and with anxiety, depression, insecurity, psychiatric disturbances, and so on (Cardone & Olson, 1969; Johnson, 1956; Weinberg, 1960). Still other studies have attempted to find a relationship between specific psychiatric or somatic symptoms and complaints to a patient's dislike for specific body parts and functions (Cassell, 1965; Cassell & Fisher, 1963; Cleveland & Fisher, 1960; Cleveland, Snyder, & Williams, 1965).

The two concepts, then if "body image" and "self" have been historically closely allied, mirroring the accepted congruence of psyche and soma. Head and Holmes (1911) were the first to state explicitly that body-image plays an important role in personality development. Freud (1927), of course, believed that the ego is strongly influenced by the id or physical part of the self; and in

formulating his theory of personality development he stressed specific body areas as of particular significance for the development of a sense of identity and of ego structure generally. Schilder (1935) implied that an intact body-image is essential for normal development, in reporting that schizophrenic patients presented distorted body perceptions and an inability to distinguish body boundaries. Murphy (1947) and Jersild (1952) both argued that a person's attitudes to the "self" influence and are influenced by his view of his physical appearance and physical functioning. Secord and Jourard (1953) hypothesized that satisfaction with the body should be related to satisfaction with the self, and that negative feelings to the body should be associated with anxiety and insecurity. These hypotheses were supported (1) by a significant positive correlation obtained between the Body-Cathexis score and the Self-Cathexis score of their BC-SC scale; and (2) by the significant negative correlations obtained between each of these two scores, and an anxiety score (as measured by the Homonyms Test), and an insecurity score (as measured by Maslow's Security-Insecurity Inventory). Secord and Jourard's study stimulated other investigators to expand on their work, and the results of these later studies (Jaskar & Reed, 1963; Johnson, 1956; Schwab & Harmeling, 1968; White & Wash, 1965) generally upheld the thesis that negative attitudes toward the body are associated with anxiety. In 1971, Clifford simplified the items of the Secord and Jourard instrument

for research on body-image and self-concepts of young adolescents ranging in age from 11 through 19 years. Clifford's major findings indicated (1) the existence among his subjects of a positive, rather than negative cathexis toward the self and the body; (2) a concern with height, weight, and physique on the part of all adolescents regardless of where they were in the growth process; and (3) a significantly greater dissatisfaction on the part of females than of males with both body and with self.

To this point, the close association of body-image with self-concept and personality variables has been considered. The existing evidence is unclear as to the causal direction of this association. But while it is possible that anxiety, depression, or other psychological factors may result in an unfavorable body-image, generally the implied relation is in the opposite direction. Usually, then, it is to the dissatisfaction with the body that dissatisfaction with the self, or anxiety, insecurity, or other undesirable psychological states are attributed.

The Effect of Chronic Illnesses on Body-Image, Self-Concept, and Self-Esteem

The question now arises as to how chronic illnesses and disabilities affect body-image, self-concept, and personality. Cleveland and Fisher in their book Body Image and Personality (1958), reported several studies demonstrating the deterioration of body-image under disabling and chronic conditions; and suggested that perceptions of body boundaries are altered in certain types of chronic illnesses such

as cancer, ulcers, and arthritis. If this assertion is true, it holds important implications for health professionals who design rehabilitation programs. Psychotherapy might be provided to such chronically ill patients to help them maintain or improve their body-image.

While the validity of Cleveland and Fisher's assertion remains questionable, other statements regarding the effects of chronic disease on self-concept and personality may be accepted with reasonable certainty. Chronic diseases often lead to structure or tissue loss, disfigurement, and dysfunction. Chronic diseases may also be associated with progressive and residual disabilities, both physical and psychological, such as immobilization, paralysis, pain, disfigurement, restriction of activities, aphasia, visual and auditory impairment, and other psychological reactions (Bellak, 1952; Burt, 1970; Leonard, 1972; Reynolds & Barsen, 1967; Ullman, 1964). Alterations in the physical body caused by a chronic condition may extend from the system originally affected to other systems, and result in the inadequate functioning of these other systems. Thus, the problems faced by the individual may be compounded. Finally, alterations in the physical body may disturb sensory channels, bring on a form of sensory deprivation, and may terminate in cognitive and perceptual changes with respect to body and self (Rubin, 1968).

A number of studies have reported lowered self-esteem and depressive moods for individuals afflicted with chronic illnesses.

Thus, Barker (1953), Goffman (1963), Krider (1959), and Wright (1960) have asserted that disabled and chronically ill persons often experience feelings of inferiority, self-depreciation, and self-hate. Similar findings have been reported by investigators who have conducted interviews on subjects with deformities of the face, breasts, and genitals (MacGregor, et al., 1953; Money & Hampson, 1955; Schonfeld, 1962). Wach and Zaks (1960) found patients with spinal cord injury, and with concomitant bladder, bowel, and sexual dysfunctions, become depressed, over-dependent, and unrealistic about the future; and exhibited severe psychological losses, with lowered self-esteem and an unfavorable self-concept. In a study of colostomy patients, Orbach and Tallent (1965) observed that every one of their 47 subjects expressed low self-esteem, an identity problem, and a deep disturbance over his altered body form. The authors also found a general consensus among their subjects that their altered body function caused them to decrease their social activities outside the home. Fear of incontinence and embarrassment were cited as the most common reasons for social withdrawal. MacGregor et al. (1953), also found that social withdrawal and decreased social participation were common defense mechanisms among their subjects with facial deformities. Feelings of self-consciousness, shame, humiliation, and fear of rejection were stated as reasons for constrained and inhibited social behavior.

The rapid growth and maturational changes of the adolescent along with the social and cultural pressures applied to him in his transition to adult life have been widely recognized as influencing self-esteem. The self-esteem of the adolescent has been the object of considerable research (Connell & Johnson, 1970; Kaplan & Pokorny, 1970; Piers & Harris, 1964; Rosenberg, 1965). But again, the specific interrelationships between physical health and appearance with perceived body-image and self-esteem for the adolescent have not been fully investigated. With respect to the effects of chronic illness and disabilities on adolescents' self-esteem and perceptions of the body, the general conclusion is that chronically ill adolescents tend to experience marked anxiety with their illness and commonly react with withdrawal, depression, acts of defiance, overdependency, denial, and non-compliance with medical regimens (Bailey, 1965; Cleveland et al., 1965; Green & Levitt, 1962; Locke, 1965; Mussen & Jones, 1965; Watson & Johnson, 1958; Wesseling, 1965). Green and Levitt (1962), have studied the construction of self-image among cardiac children. They found that children with cardiac conditions depict themselves in drawings as smaller than normal healthy children. Green and Levitt attributed the smaller drawings of children with cardiac problems to two factors: first, to the patients' continual dependency and need for help, and secondly, to the fact such children are actually small in physical size. In their case studies of children and adolescents with acquired physical disfigurement, Watson and Johnson (1968) found

severe anxiety was associated with the disfigurement or defect. Swift, Seidman, and Stein (1967) found adolescents with juvenile diabetes were often infantilized and overdependent. They noted, in addition, a high incidence of non-compliance with medical regimens and diets. Mussen and Jones (1957) have shown that somatic variations attendant on early versus late maturation have an immense impact on the personality of boys, with lesser motivation and negative interpersonal attitudes being manifested by the late-maturing boys. All the above studies generally support the viewpoint that disabilities or defects due to chronic illness represent a stressful experience for the adolescent. Such a stressful experience is often reflected in major psychological problems.

To the knowledge of the present author, only one study exists which explores the perceptions of the body held by adolescents who have undergone renal transplantation. Korsch et al. (1972) investigated the body perceptions of children who were being treated with hemodialysis and renal transplantation for end-stage renal disease. The two projective tests Korsch et al. used to test the body perceptions of their 35 subjects were the Draw-A-Person and Draw-What's Inside-The-Person tests. Although these two tests did not reveal strong and consistent patterns, the authors noted that some children drew detailed patterns of the arteries and veins in their bodies. This response was attributed to their having shunts and fistulas. The authors also noted that

five of the children drew no kidneys, and four depicted only one kidney. Korsch et al. (1972) were unable to arrive at specific conclusions from the data obtained by use of these two projective tests. However, through administering the Piers Self-Esteem Scale, they were able to show that children in the renal sample indicated lower self-esteem than did a control group of well children. Renal patients also scored high on Sarason's Anxiety Scale.

Summarizing to this point, then, it appears that chronic illnesses are frequently associated with depression, anxiety, interpersonal problems, low participation in social activities, and in some cases denial of illness. These latter phenomena have been also associated with low "self-esteem" (Rosenberg, 1965). The effects of illness on the self or on personality would also seem to be more profound to the extent that the condition is severe and disabling. Thus, particularly strong attitudes of horror, shame, self-degradation, low self-esteem, and self-hate have been described among individuals who have suffered such extreme bodily alterations as mutilating surgery, colostomies, amputations, and paralysis (MacGregor et al., 1953; Sutherland et al., 1952; Tarlau & Smalheiser, 1951; Ware, Fisher, & Cleveland, 1957; Weinstein, Malitz, & Barker, 1954). Renal failure and required transplantation would appear to qualify as particularly severe physical problems with far reaching and life-threatening consequences. Hence chronic renal failure might be expected to elicit stronger feelings than most disabilities or disfigurements. It would also seem that adolescents might find it harder to cope with such

problems than persons in other age brackets, and that females would find it harder to adjust than males. Meissner et al. (1967) have investigated the relationship between self-esteem and obvious physical disabilities among male and female adolescents. Those authors found that males having disabilities with high impact tended to give positive self statements whereas females having disabilities with high impact tended to give negative self statements. The authors suggested that the inconsistency of the male responses were due to the use of denial on the part of males. The use of denial has been commonly reported among individuals faced with life threatening situations. Denial has been commonly reported among dialysis and transplant subjects (DeNour, 1968; Katz & Proctor, 1969; Eisendrath, 1969; Hertel & Kempf, 1969; Short & Wilson, 1965). It may be that this mechanism of denial will function for the subjects in this study and affect the relationships between body-image, self-concept, and self-esteem.

The Effect of Sex on Body Image, Self-Concept, and Self-Esteem

A number of studies provide evidence for the assertion that females find it harder to adjust to physical problems than males. First, Wittreich and Grace (1955) reported differences in perceptions between men and women who observed their mirror images through distortion lenses. Women reported fewer changes in their legs and

feet under such circumstances than did men. The authors explained their findings as follows: Legs are a symbol of attractiveness for women; Women's perceptions of their legs through the distorted lenses initiated anxiety and uncertainty; Due to this anxiety women tended not to perceive or report changes in their legs. The basic hypothesis of Wittreich and Grace, then, was that perceptions which arouse anxiety in an individual are unlikely to be observed or reported by that individual.

Second, Secord and Jourard (1955) demonstrated that females who do not attain their perceived ideal figures often feel insecure, and interpreted this finding in causal terms. Third, Cleveland and Fisher (1964) found that women perceive their body boundaries more exactly than do men. Their suggested explanation is that since women in our culture devote more time and effort to grooming their bodies, they tend to equate their self-concepts with their bodies to a greater extent than do men. Fourth, Schwab and Harmeling (1968), White and Wash (1965), and Meissner et al. (1967), also noted significant differences in the response tendencies of males and females, in that females proved to be more critical of their bodies and of themselves. Finally, Clifford (1971) also obtained results in agreement with the above. In his research, females expressed greater dissatisfaction with themselves and their bodies than did males. However, both sexes expressed relatively high levels of body-satisfaction and self-satisfaction; and both sexes expressed approximately the same amount of dissatisfaction with the five body

dimensions selected by Secord and Jourard (1955) as culturally salient for females, namely, height, weight, bust or chest, waist, and hips. Clifford therefore concluded that these aspects of body experience are concerns common to all adolescents in our culture, and not to females alone.

In conclusion, this review of the literature may be summed up with the following statements: (1) Body image is intimately related to the self-concept; (2) Illness affects both body image and self-concept or esteem, and in addition other personality attributes; (3) Differences in body satisfaction and self-esteem seem to exist among various age groups and between the sexes, with adolescents and females demonstrating somewhat greater concern with body image. Thus, one might expect the correlation between body image and self-concept to be of a higher magnitude for adolescents and for females than for other age groups and for males.

Statement of the Problem

The general purpose of this research was to explore the impact of renal failure and kidney transplantation on the body-image and self-concept of adolescents. Since it has been shown that some chronic illnesses which alter the form or function of the body tend to generate in the individual negative feelings toward the body and the self, the present investigator was interested in determining whether adolescents with renal transplants express a less favorable body-image and experience lower self-esteem than do healthy adolescents.

A second question of interest concerned the different significance of particular body parts and functions for adolescents with renal transplants than for healthy adolescents. Seven items were selected by the present investigator as being particularly problematic for adolescents who have undergone renal transplantation. These seven body parts or functions include height, weight, facial complexion, elimination processes, sexual development, body build, and health. These are the characteristics which have been cited throughout the medical literature as commonly affected by immunosuppressive therapy (Blodgett et al., 1956; Bravo, Herman, & Smyth, 1967; Grushkin, Korsch, & Fine, 1973). Other complications and side effects of immunosuppressive therapy such as hirsutism and cataracts have been reported also. However the investigator did not observe the presence of these physical side effects among the subjects in

the present study. Therefore these items were not considered to be particularly problematic to them and were not included along with the seven specific items.

The third question of interest confronting the investigator was the extent of congruence among the three attitudes of body-satisfaction, self-satisfaction, and self-esteem. The fourth and fifth questions asked were: Do self-esteem, satisfaction with self and satisfaction with the body vary with sex? Do self-esteem, satisfaction with self, and satisfaction with body vary with severity of illness or extent of disability?

To answer these questions, a test measuring attitudes to the body and to the self (Clifford's modification of Secord and Jourard's Body-Cathexis - Self-Cathexis Scale), and a test measuring self-esteem (Rosenberg's Self-Esteem Scale) were selected for administration to a sample of adolescents who had successfully survived kidney transplantation, and to a control sample of healthy adolescents.

Hypotheses

On the basis of the review of the literature, a number of hypotheses regarding the problem and each of the five questions stated above were formulated. The specific hypotheses subjected to test in this research follow.

- 1a. Adolescents with renal transplants tend to express less satisfaction with their bodies than do healthy adolescents.

- 1b. Adolescents with renal transplants tend to express less self-satisfaction than do healthy adolescents.
- 1c. Adolescents with renal transplants tend to express lower self-esteem than do healthy adolescents.
2. Adolescents with renal transplants tend to express less satisfaction with their height, weight, facial complexion, elimination processes, sexual development, body build, and health, than do healthy adolescents.
3. Satisfaction with the body, self-satisfaction, and self-esteem all tend to be positively interrelated.
- 4a. Females tend to express less satisfaction with their bodies than do males.
- 4b. Females tend to express less self-satisfaction than do males.
- 4c. Females tend to express lower self-esteem than do males.
5. Severity of illness tend to be negatively related to satisfaction with the body, to self-satisfaction, and to self-esteem.

Justification For The Study

According to a study of pediatric renal failure conducted by the American Society of Pediatric Nephrology (1972), at least five per million children between the ages of 1 and 16 years of age are newly identified each year as requiring either chronic dialysis or transplantation in order to avoid death. Accumulative experience with immunosuppressive therapy has contributed to the development of successful transplantation programs for children and teenagers. Thus, within the last decade, transplantation has become the favored form of treatment for young adults with end-stage renal disease. In making this decision, the long term effects of immunosuppressive drugs

have often been ignored as relatively unimportant. Thus, treatment tends to be geared toward prolonging life with little attention directed to the quality of the life saved. Rarely do medical records mention the emotional reactions of patients who have received renal transplants. However, chronic renal disease in childhood and adolescence is generally recognized as a stressful experience which together with the experience of renal transplantation can produce profound physical and emotional changes in the individual. Lilly et al. (1971) have reported two cases of suicide among teenagers receiving transplants. One committed suicide by leaping from a hospital window, and the other by discontinuing immunosuppressive treatment and failing to comply with his prescribed medical regimen. Although the number of suicides among teenagers with renal transplants is probably small, the psychiatric complications that lead to suicide may be more common. This makes it imperative to evaluate transplantation in psycho-social as well as in biological and physiological terms. In view of the time, money, and effort which goes into the treatment of a patient with renal failure, the impact of transplantation and the patient's emotional responses should be considered in order to obtain optimal outcomes and satisfactory adjustment. Presently most of our understanding of the psychological adjustment of adolescents receiving transplants has been based on incidental observations rather than scientific inquiry. Systematic measuring of body-image perceptions and self-esteem among adolescents

who have undergone transplantation should provide a more rational basis for improved patient management and rehabilitation.

CHAPTER II

METHODOLOGY

Subjects

The subjects for this study were 13 adolescents who had received renal transplants, and an equal number of healthy adolescents matched to the renal patients with regard to sex, age, and socioeconomic status. The transplant subjects were selected from patients at the Renal Transplant Clinic in the University of Oregon Health Sciences Center. The facilities for the Pediatric Transplant Program include the following:

1. Doernbecher Memorial Hospital, with 85 pediatric beds, and an average of 4 to 5 renal in-patients daily.
2. Pediatric Renal and Transplant Clinics held on Tuesday and Wednesday afternoon, respectively. The current pediatric renal census is approximately 250 outpatients. At the time of the study, approximately 39 renal transplants had been performed on 32 pediatric patients. Some of these patients have undergone renal transplantation a number of times. Of the 32 pediatric patients receiving transplants, 26 were being actively followed at the time of the study.

At the time of the study, the University of Oregon Health Sciences Center was the only major facility in the state of Oregon which provided transplant treatment and followup for patients requiring such services.

From the list of 26 renal patients being actively treated at the Pediatric Renal Transplant Clinic, a total of 15 adolescents (8 females and 7 males) were found to meet the criteria for inclusion in this study. These 15 adolescents were contacted either in person at the Renal Transplant Clinic during their follow-up visits, or by mail and asked to participate in the study. Healthy counterparts to transplant patients were obtained by asking each transplant subject to name a friend of the same age and sex who lived in his neighborhood. It was believed that this method might provide a rough control for socioeconomic status. If a transplant subject was unable to name a friend or suitable person with the matching characteristics, a healthy counterpart was obtained from the Portland community by the investigator.

The following criteria were employed in the selection of subjects:

1. The subject must be between 11 and 19 years of age.
2. The renal transplant subject must be free from any acute episode of rejection requiring a return to dialysis at the time of the study.
3. Each normal counterpart to a transplant subject must be of the same sex, and must not differ by more than one year in age, or one class level in socioeconomic status.
4. Each normal healthy counterpart must present a history free from chronic illness, visible physical disfigurement, or gross functional disability.

Data were obtained from only 13 of the 15 subjects contacted. Several attempts were made to contact a 12 year old female, but without success. Another subject, a 19 year old male, refused to answer the questionnaire and did not wish to participate in the study. In the final sample, then, 7 of the subjects were females and 6 were males. Ten of the transplant subjects were able to name individuals who met the matching criteria. Two of the male transplant subjects could not name counterparts and one female subject named a counterpart who had epilepsy. Thus it was necessary for the investigator to find three adolescents who matched these three transplant patients in sex, age, and social class position.

Data and Data-Gathering Instruments

The major data for this study were obtained through the use of two instruments, Clifford's (1971) modified version of the Secord and Jourard's Body-Cathexis - Self-Cathexis Scale, and Rosenberg's (1965) Self-Esteem Scale. Additional data were obtained through medical records, and through respondents' answers to questions on a General Information Sheet attached to copies of the tests.

Body-Cathexis - Self-Cathexis Scale (BC-SC)

Secord and Jourard's BC-SC Scale was designed to measure the degree of one's satisfaction or dissatisfaction with the various parts or processes of the body, and also to measure general self satisfaction. In Clifford's (1971) modified version of Jourard and

Secord's (1953) test the items have been simplified for use by young adolescents. For the purpose of testing Hypothesis 2 of the present study, the investigator further modified Clifford's BC Scale by adding four items: elimination, sexual development, facial complexion, and body build. The other three items known to be influenced by immunosuppressive drugs, namely height, weight, and health, were already covered by the Clifford instrument.

As used in this study, the BC-SC Scale contains two sections. The first section of 51 items refers to specific body parts and functions. The second section consists of 29 self-traits identified by Clifford as representing the conceptual aspects of the self. Each of the items in both sections is rated by the respondent on a 5-point scale: (1) I don't like it at all and I wish it could be changed; (2) I don't like it; (3) I have no special feelings about it one way or the other; (4) I am satisfied; (5) I am completely satisfied and would not change it if I could. (See Appendix D for a copy of the complete instrument.) Secord and Jourard assumed the ordinality of this scale. Scores for the Body-Cathexis Scale are obtained by summing the item ratings and dividing the sum by 51 (the number of items). Scores for the Self-Cathexis Scale are similarly obtained by summation and division by 29, the number of items.

The Scale appears to be reasonably reliable. Secord and Jourard (1953) obtained a split-half reliability of .78 and .83 for

males and females respectively for body cathexis. Weinberg (1960) obtained reliability coefficients of .84 for males, and .75 for females for body cathexis. Johnson (1956) reported test-retest coefficients of .72 for 52 males students after a 6 to 8 week interval for body cathexis. Secord and Jourard (1953) found low but significant relationships between Body-Cathexis as measured by the BC Scale and both anxiety, measured by the Homonyms Test, and insecurity, measured by Maslow's Security-Insecurity Inventory. For Self-Cathexis Secord and Jourard obtained reliability .88 and .92 for males and females respectively. To the extent that anxiety and insecurity are considered essential components of body image, these correlations constitute partial evidence of the validity of the scale.

Rosenberg Self-Esteem Scale (RSE)

The Self-Esteem Scale constructed by Rosenberg (1965) measures adolescents' attitudes toward the self along a favorable to unfavorable dimension. Unidimensionality of this measure was achieved through the application of Guttman scaling techniques. The RSE consists of 10 items, each requiring one of four responses: Strongly agree, agree, disagree, and strongly disagree. The 10 items are scored to yield a 7-point scale. (See Appendix E for a copy of this instrument.) Silber and Tippet (1965) have conducted extensive research with the RSE and have reported several high cross-instrument correlations. Convergent validity values between the Rosenberg Scale and the Kelly Repertory Test, the Heath Self-Image Questionnaire, and the Interviewer's Ratings of Self-Esteem were .67, .83, and .56, respectively. In his book, Society and the

Adolescent Self Image, Rosenberg (1965) reported a significant association between self-esteem and depressive affect as measured by another self-administered scale. Rosenberg also found significant relationships between self-esteem, anxiety, and the number of psychosomatic symptoms reported by the adolescent.

A reproducibility coefficient of .92 was reported by Rosenberg (1965) for his test with high school subjects. Silber and Tippet (1965) found a test-retest reliability coefficient of .85 for college students retested after two weeks.

Additional Data

At the time of the administration of the tests each subject filled in a sheet providing general information concerning his age, date of birth, grade in school last finished, his address, and whether or not he was "being treated for a long lasting illness". Each subject was also asked the sex and ages of his siblings, and the occupation and education of his parents so that his socio-economic status might be estimated according to Hollingshead's (1957) Two-Factor Index of Social Position. (See Appendix B for a complete copy of items on this General Information Sheet.)

Each transplant subject was asked to name a neighborhood friend or classmate of his own sex and age, in order to facilitate the selection of a normal healthy counterpart. (It was hoped that socio-economic class might be roughly controlled by this stratagem of matching on the basis of residential area.) If the transplant subject was unable to name a friend, then a healthy counterpart

was chosen by the investigator. Hollingshead's (1957) Two-Factor Index of Social Position (which is based on occupation and education) was used to determine socio-economic status for the purpose of matching subjects in this respect. This Index is calculated by summing the subjects' score on an education scale (weighted by seven) and his score on an occupational prestige scale (weighted by four). In the case of adolescents, social position is determined by father's education and occupation, and possible scores range from 11 (highest social position) to 77 (lowest). This range has been divided by Hollingshead into five classes, Class I (scores 11-17), Class II (scores 18-31), Class III (scores 32-47), Class IV (scores 48-63), and Class V (scores 64-77). This measure of social position has been widely used and the reliability of its scoring procedure and the validity of the Index have been extensively studied. (See Bonjean, Hill, & McLemore, 1967.)

In addition to providing the above background data, each transplant subject was also asked to report the date of his transplants, the date of his first knowledge about his kidney disease, and his perception of his current kidney functioning. (See Appendix C for a complete copy of items on this Transplant Information Sheet.)

Finally, since it was hypothesized that the severity of disease was negatively related both to body satisfaction, and self-concept, it was necessary to obtain a measure of this severity.

At check-ups, each transplant patient is routinely evaluated for kidney function by his attending physician and the creatinine clearance level is entered into his medical chart. Using creatinine clearance levels as guidelines, the transplant subjects were divided into three groups as follows: (1) "good" condition, creatinine levels above 50cc/min clearance; (2) "fair" condition, 20-49cc/min clearance; (3) "poor" condition, less than 20cc/min clearance. Since other factors beside creatinine clearance can be indicative of true renal function, final placement of each transplant subject into one of the three groups was made on the basis of the judgment of the subject's attending physician.

Design and Procedure

The design of the present study was non-experimental. The aim was to obtain descriptive data by exploring relationships between body satisfaction and self-concept among two comparison groups.

In order to confirm the ordinal nature of the 5-point scale used for the Modified Body-Cathexis and Self-Cathexis Scores, the instrument was pre-tested on adolescents who were not potential subjects. The following five statements were written on separate index cards:

1. I don't like it at all and I wish it could be changed.
2. I don't like it.
3. I have no special feelings about it one way or the other.

4. I am satisfied.
5. I am completely satisfied and would not change it if I could.

Ten adolescents were asked to rank the statements by placing the cards in a row starting with the statement expressing the least satisfaction and ending with the statement expressing the most satisfaction. The cards were shuffled between trials to reduce the danger of the establishment of a response set. Pretesting results confirmed the ordinal nature of the scale. Nine out of the ten adolescents ranked the cards as ordered above. Only one adolescent questioned the ordinal nature between statements numbered 4 and 5. This particular adolescent stated that a person can be "completely satisfied and would not change" if he could because the person may consider himself fortunate rather than being truly satisfied. However, when directed to consider general situations rather than exceptional cases, the adolescent conceded and was in agreement with the rankings of the other nine adolescents.

An exact set of instructions was provided at the beginning of the questionnaire and no time limitation was set for answering the items although all subjects were told that most individuals were able to answer the questions within an hour. Each subject was asked to rate the strength and direction of his feelings about various parts or functions of his body on the BC and SC Scales by circling the number assigned to the statement which best described his feelings. He was also told to check the word or words which

best described his feelings on the Rosenberg Scale. He was told to answer all items. If the meanings of any particular items were not known to the subject, or if the subject had a question concerning any of the items, he was instructed to ask the investigator, who thereupon provided a definition of terms from the Webster School and Office Dictionary.

Healthy counterparts of transplant subjects were contacted and appointments were arranged to administer the questionnaires in their homes. Whenever feasible, the investigator attempted to be present when the questionnaires were administered.

In several cases it was necessary to contact transplant subjects and/or their healthy counterparts by phone or mail because their clinic appointments were scheduled at long intervals, or because long distances made it difficult to commute. In such instances, the questionnaire was mailed with instructions and an accompanying letter explaining the study. A self-addressed stamped envelope was provided for returning the questionnaire to the investigator. All subjects were volunteers with parental consent to participate in the study. Consent from the attending physician of the transplant subject was also obtained. (Permit form is reproduced in Appendix A.)

Analysis of Data

Nonparametric statistics such as the Wilcoxon Matched-Pairs Signed-Ranks Test and Mann-Whitney U Test were primarily used for analysis because of the ordinal nature of the data.

The Wilcoxon Signed-Ranks Test was used in order to determine whether the scores of the transplant subjects differed from the scores of their matched normal counterparts on each of the three tests; Body-Cathexis Scale, Self-Cathexis Scale, and the Rosenberg Self-Esteem Scale. In addition, since it was hypothesized that scores on seven specific items on the Body-Cathexis Scale (individually and collectively) would differ significantly for the two groups, the Wilcoxon Signed-Ranks Test was also utilized to test any significant differences in those responses of the two groups.

The Mann-Whitney U Test was selected to test the significance of the difference in scores of males and females on the Body-Cathexis and Self-Cathexis Scales.

Finally, Pearsonian product-moment correlation coefficients were obtained to determine the degree of association between the three sets of scores for each group of subjects. Pearson correlations were used by Secord and Jourard in their study. Since the investigator wished to compare the results of Secord and Jourard's study with those of the present study, Pearsonian product-moment correlation coefficients were used in preference to the Spearman Rho. Because of the ordinal nature of the data, the use of a non-parametric measure is subject to dispute. It has been vigorously argued in recent years that the use of correlational techniques with ordinal data entails only negligible error; and it would appear that the use of such tests has become an increasingly acceptable practice. (See Blalock, 1964; Cohen, 1965; Labovitz, 1967, 1970,

1971.) However in view of the lack of consensus on this matter of method, the exploratory nature of this study should be stressed.

CHAPTER III

RESULTS

As stated in the preceding chapter, an effort was made to match the 13 pairs of subjects according to age, sex, and socioeconomic status. It would appear from Table 1 that this effort was successful. The mean ages of the transplant subjects and normals were 14.23 years and 14.00 years, respectively. Of the total 13 matched pairs, 6 pairs were males and 7 pairs were females. The mean scores for social status were 47.92 for the transplant subjects and 52.30 for their paired healthy counterparts. These scores were close, located near the borderline of Classes III and IV.

Body Cathexis, Self-Cathexis, and Self-Esteem

Table 2 permits a comparison of the Body-Cathexis scores of each transplant subject with that of his matched counterpart. Only in 8 out of the 13 pairs did the healthy counterpart score higher. When both direction and magnitude of the differences were considered, according to the Wilcoxon Matched-Pairs Signed-Ranks Test, the difference between the two groups proved to be not significant. A T value of 26.5 was obtained, whereas a T of 17 or

less was needed for significance at the .025 level, one tailed test. Thus, the first hypothesis that adolescents with renal transplants tend to express less satisfaction with their bodies than do healthy adolescents could not be accepted.

Likewise, no support was found for Hypothesis 1b; that transplant subjects would express less self-satisfaction than healthy normal adolescents. In Table 3 the scores of the two groups of subjects for the Self-Cathexis Scale are presented. Again, the T obtained by the Wilcoxon Signed-Ranks Test was too large to indicate a significant difference. A T of 40.5 was obtained whereas for significance at the .025 level, one-tailed test, a T of 17 or less was needed.

The Rosenberg Self-Esteem Scores of members of the transplant group and their healthy counterparts were also compared and tested by the Wilcoxon Matched-Pairs Signed-Ranks Test. The findings are presented in Table 4. As in the preceding Wilcoxon analyses, a T score of 37 revealed no significant difference between the two groups with respect to the Rosenberg Self-Esteem Scores. Thus Hypothesis 1c that adolescents with renal transplants would express lower self-esteem than do normal healthy adolescent was also rejected.

Table 1: Characteristics of Renal Transplant Subjects and Their Paired Healthy Counterparts

Pair Number	Characteristics of Renal Transplant Subjects (N=13)					Characteristics of Paired Healthy Counterparts (N=13)				
	Sex	Age	Social Position Index Score	Social Class	Time of Organ Survival in Months	Medical Condition	Sex	Age	Social Position Index Score	Social Class
1	M	13	51	IV	1	good	M	14	59	IV
2	M	14	44	III	19	good	M	14	44	III
3	M	12	37	III	17	good	M	12	44	III
4	M	14	47	III	46	fair	M	13	73	V
5	M	18	45	III	4	good	M	18	58	IV
6	M	15	40	III	19	good	M	14	58	IV
7	F	14	65	V	28	fair	F	14	52	IV
8	F	12	58	IV	16	fair	F	11	62	IV
9	F	11	33	III	69	good	F	10	22	II
10	F	16	44	III	23	good	F	17	44	III
11	F	14	55	IV	13	good	F	14	44	III
12	F	14	62	IV	62	fair	F	13	58	IV
13	F	18	52	IV	53	good	F	18	62	IV
Means		14.23	47.92		27.30			14.00	52.30	

Table 2: Wilcoxon Matched-Pairs Signed-Ranks Test For Differences in Body Cathexis Scores of Renal Transplant Subjects and Their Normal Healthy Counterparts

Matched Pair	Body-Cathexis Scores Transplant Member (N=13)	Counterpart Member (N=13)	Differences Between Scores of the Matched Pair	Ranked Differences*
1	175	166	9	4
2	161	195	-34	-9
3	182	220	-38	-10
4	146	207	-61	-12
5	176	190	-14	-5.5
6	190	176	14	5.5
7	148	238	-90	-13
8	200	196	4	2
9	175	180	-5	-3
10	190	159	31	8
11	181	183	-2	-1
12	192	168	24	7
13	155	204	-49	-11

*Ranked differences analyzed by Wilcoxon's Matched-Pairs Signed-Ranks Test. (T=26.5, N=13, $p < .025$, one-tailed test)

Table 3: Wilcoxon Matched-Pairs Signed-Ranks Test For Differences in Self-Cathexis Scores of Renal Transplant Subjects and Their Normal Healthy Counterparts

Matched Pair	Self-Cathexis Scores Transplant Member (N=13)	Counterpart Member (N=13)	Differences Between Scores of the Matched Pair	Ranked Differences*
1	116	119	-3	-1.5
2	96	101	-5	-3.5
3	116	110	6	5.5
4	110	116	-6	-5.5
5	103	110	-7	-7
6	100	109	-9	-8
7	98	138	-40	-13
8	123	113	10	9.5
9	89	113	-24	-12
10	123	120	3	1.5
11	126	111	15	11
12	115	105	10	9.5
13	103	98	5	3.5

*Ranked differences analyzed by Wilcoxon's Matched-Pairs Signed-Ranks Test. (T=40.5, N=13, $p < .025$, one-tailed test)

Table 4: Wilcoxon Matched-Pairs Signed-Ranks Test For Differences in Rosenberg Self-Esteem Scores of Renal Transplant Subjects and Their Normal Healthy Counterparts

Matched Pair	Rosenberg Transplant Member (N=13)	Rosenberg Self-Esteem Scores Counterpart Member (N=13)	Differences Between Scores of the Matched Pair	Ranked Differences*
1	6	6	0	--
2	4	5	-1	-4
3	5	5	0	--
4	5	7	-2	-9
5	5	4	1	4
6	6	7	-1	-4
7	5	6	-1	-4
8	7	6	1	4
9	5	6	-1	-4
10	7	5	2	9
11	7	3	4	11
12	6	4	2	9
13	5	6	-1	-4

*Ranked differences analyzed by Wilcoxon's Matched-Pairs Signed-Ranks Test. (T=37, N=11, $p < .025$, one-tailed test)

Table 5: Wilcoxon Matched-Pairs Signed-Ranks Test For Differences in Scores on Seven Specific Items Given By Transplant Subjects and Their Normal Healthy Counterparts

Matched Pair	Total Scores on Seven Specific Items Transplant Member (N=13)	Counterpart Member (N=13)	Differences Between Scores of the Matched pair	Ranked Differences*
1	19	28	-9	-9.5
2	20	29	-9	-9.5
3	17	33	-16	-12
4	20	30	-10	-11
5	22	26	-4	-4
6	24	20	4	4
7	20	28	-8	-7.5
8	25	27	-2	-1
9	18	22	-4	-4
10	22	22	0	--
11	22	17	5	6
12	20	23	-3	-2
13	20	28	-8	-7.5

*Ranked differences analyzed by Wilcoxon's Matched-Pairs Signed-Ranks Test. (T=10, N=12, $p < .025$, one-tailed test)

Differences on Seven Specific Items Between The Transplant Group and Their Healthy Counterparts

Hypothesis 2 stipulated that transplant subjects would express a lower satisfaction with seven specific items concerning the body; namely health, height, weight, body build, sexual development, elimination, and facial complexion. To test this hypothesis, the scores for the seven items were summed to arrive at a total score for each of the thirteen transplant subjects and each counterpart. The Wilcoxon Matched-Pairs Signed-Ranks Test was then applied to determine the significance of the differences in these scores of patients and their counterparts. The findings are presented in Table 5. All but three transplant subjects obtained total scores for the seven specific items smaller than those of their counterparts. For a one-tailed test, and an alpha level set at .025, a T value equal to 14 or less was needed to indicate a significant difference between the two groups. A T score of 10 was obtained, which supported the hypothesis that transplant subjects should express less satisfaction for the seven selected items than their normal healthy counterparts. However, further analysis indicated that this result was mainly produced by the subjects' reactions to their health and height. According to the sign test, only the responses to those two of the seven items differed significantly between the two groups.

Congruence of Body-Satisfaction, Self-Satisfaction, and Self-Esteem

Hypothesis 3 stated that satisfaction with body, self-satisfaction, and self-esteem all tend to be positively related. The Pearsonian correlation coefficients obtained between each pair of tests for each group of subjects are entered into Table 6. It may be noted that all these correlations are indeed positive, and these facts might possibly be taken as supportive of the hypothesis. However, of the three correlations obtained for the healthy adolescents, none is significant at the .05 level. For the transplant subjects, the correlation of Body-Cathexis to Self-Cathexis is not significant. The other two correlations, between Body-Cathexis and Self-Esteem, and between Self-Cathexis and Self-Esteem, are significant at the .01 level. Taken altogether, these data provide only partial confirmation for Hypothesis 3.

It may be observed that the correlations for the transplant group are considerably larger in magnitude than the correlations for the healthy adolescents. The question arises, then: Are these differences sufficiently large to imply that the two sets of subjects come from different populations? Put in other words, is it reasonable to conclude that attitudes to the body are much more important for the self-conception and self-esteem of the physically disabled (i.e., transplant) adolescents than for the normal healthy adolescents:

To answer this question, the r values were first transformed into z values. Next the Fisher Z values for the differences between the correlations obtained for the two groups were calculated. Finally the probability values for obtaining differences of such magnitudes were determined on the basis of a two-tailed test, using the table of the standard normal curve. The Fisher Z values and the probability values are presented in the fourth and fifth columns of Table 6. The probability values obtained (.55, .15, and .06) lead to the acceptance of the null hypothesis. The differences between the pairs of correlation coefficients are not sufficiently large to cause us to believe they derived from different populations. In short, there is not sufficient evidence to believe that the congruence of self-satisfaction, body-satisfaction, and self-esteem is greater for transplant than for normal subjects.

Sex Differences in Body-Cathexis, Self-Cathexis, and Self-Esteem

Hypotheses 4a, 4b, and 4c stipulate that females tend to express less body-satisfaction, less self-satisfaction, and lower self-esteem than do males. To test these hypotheses, the Mann-Whitney U test was chosen. This test is one of the most powerful of the non-parametric tests. It appears appropriate here, since the measures were ordinal, and since the two samples were not related.

Table 6: Pearsonian Correlations Between Body-Cathexis, Self-Cathexis, and Rosenberg Self-Esteem Scores for Transplant and Healthy Subjects; and Fisher Z Scores with Probability Values

Pair of Measures	Healthy Subjects	Transplant Subjects	Fisher Z Score	Probability Value
Body Cathexis and Self-Cathexis Scales	$r = .290$	$r = .507$.573	.57
Body Cathexis and Rosenberg Self-Esteem Scales	$r = .221$	$r = .702^*$	1.437	.15
Self-Cathexis and Rosenberg Self-Esteem Scales	$r = .219$	$r = .785^*$	1.864	.06

*Correlations significant at the .01 level.

Table 7: Mann-Whitney U Test for Significance of the Difference in Scores of Males and Females on the Body-Cathexis Scale

Females' Scores on The Body-Cathexis Scale (N=14)	Rank	Males' Scores on The Body-Cathexis Scale (N=12)	Rank
148	2	146	1
155	3	161	5
159	4	166	6
168	7	175	8.5
175	8.5	176	10.5
180	12	176	10.5
181	13	182	14
183	15	190	17
190	17	190	17
192	19	195	20
196	21	207	24
200	22	220	25
204	23		
238	26		
	$R_2=192.50$		$R_1=158.50$

U=80.50

Table 8: Mann-Whitney U Test For Significance of the Difference in Scores of Males and Females on the Self-Cathexis Scale

Females' Scores on The Self-Cathexis Scale (N=14)	Rank	Males' Scores on The Self-Cathexis Scale (N=12)	Rank
89	1	96	2
98	3.5	100	5
98	3.5	101	6
103	7.5	103	7.5
105	9	109	10
111	14	110	12
113	15.5	110	12
113	15.5	110	12
115	17	116	19
120	22	116	19
123	23.5	116	19
123	23.5	119	21
126	25		
138	26		
$R_2=206.50$		$R_1=144.50$	

U=66.50

Table 9: Mann-Whitney U Test for Significance of the Difference in Scores of Males and Females on the Rosenberg Self-Esteem Scale

Females' Scores on The Rosenberg Self-Esteem Scale (N=14)	Rank	Males' Scores on The Rosenberg Self-Esteem Scale (N=12)	Rank
3	1	4	3
4	3	4	3
5	9	5	9
5	9	5	9
5	9	5	9
5	9	5	9
6	17.5	5	9
6	17.5	6	17.5
6	17.5	6	17.5
6	17.5	6	17.5
6	17.5	7	24
7	24	7	24
7	24		
7	24		
	<u>24</u>		<u>24</u>
	$R_2=199.5$		$R_1=151.5$

U=73.5

Table 10: Renal Function of Transplant Subjects and Total Scores for Body Cathexis, Self-Cathexis, and Self-Esteem for Both Transplant Subjects and Their Normal Healthy Counterparts

Matched Pair No.	Renal Function of Transplant Subject	<u>Body Cathexis Scores</u>		<u>Self-Cathexis Scores</u>		<u>Rosenberg's Self-Esteem Scores</u>	
		Transplant	Non-Transplant	Transplant	Non-Transplant	Transplant	Non-Transplant
1	good	175	166	116	119	6	6
2	good	161	195	96	101	4	5
3	good	182	220	116	110	5	5
4	fair	146	207	110	116	5	7
5	good	176	190	103	110	5	4
6	good	190	176	100	109	6	7
7	fair	148	238	98	138	5	6
8	fair	200	196	123	113	7	6
9	good	175	180	89	113	5	6
10	good	190	159	123	120	7	5
11	good	181	183	126	111	7	3
12	fair	192	168	115	105	6	4
13	good	155	204	103	98	5	6

In view of the directionality of the predictions, a one-tailed test was used. The alpha level was set at .05. The U values were computed by first combining the scores from both groups (males and females), then ranking them in order of increasing size, and finally determining the sum of the ranks for females and males. (For this procedure, see Segal, 1956: 126.) The scores of male and female subjects, together with their rankings, are shown in Table 7 for the Body-Cathexis Scale, in Table 8 for the Self-Cathexis Scale, and in Table 9 for the Rosenberg Self-Esteem Scale. For a one-tailed test, with an alpha level set at .05, with $n_1=12$, and $n_2=14$, the critical value of U is 51. In other words, a U of 51 or less is required in order to reject the null hypothesis.

The observed values of U were 80.50, 66.50, and 73.50 for the Body-Cathexis, Self-Cathexis, and Self-Esteem Scales, respectively. These observed values exceed the critical value of 51. Hence there is no justification for rejecting the null hypothesis. The conclusion is that these data do not support the hypotheses that females express less body-satisfaction, less self-satisfaction, and lower self-esteem than males. Parenthetically, it may be noted that, contrary to prediction, the average score for the females on each of three tests was a few points higher than the average score for the males. But these small differences were not significant.

Severity of Illness in Relation to Body Cathexis, Self-Cathexis, and Self-Esteem

Hypothesis 5 stated that severity of illness tends to be negatively

related to satisfaction with the body, to self-satisfaction and to self-esteem. A statistical analysis of severity of disease in relations to Body-Cathexis, Self-Cathexis, and Rosenberg's Self-Esteem Scores was not feasible due to the lack of variability in degree of illness among the subjects. Only four of the thirteen renal subjects were rated as "fair" in respect to function of kidney transplant while the remaining nine renal subjects were rated as "good" in transplant function (See Table 10). This lack in variability may well be a consequence of the small sample size. Inspection of the data of the four renal subjects with fair function revealed that they were responsible for the two highest and the two lowest scores on the Body-Cathexis Scale. No consistent patterns emerged on the Self-Cathexis and Rosenberg Self-Esteem Scales. From these data no conclusions may be drawn regarding the validity of the hypothesis that severity of illness is negatively related to body satisfaction, self-satisfaction, and self-esteem.

CHAPTER IV

DISCUSSION

Body-Cathexis, Self-Cathexis, and Self-Esteem Among Transplant and Non-Transplant Subjects

No significant differences in body image, self-concept, or self-esteem were found between normal healthy adolescents and those who received renal transplants. These findings ran counter to prediction. They also ran counter to the findings reported by Barker et al. (1953) and by Korsch et al. (1972), namely, that the individual with renal disease or other chronic illness manifests lower self-esteem and a less favorable self-concept than the individual free from chronic illness. Finally, the present findings disagreed with the finding of Cleveland and Fisher (1968) that the chronically ill individual has a less favorable body image than does the healthy individual.

The present failure to uncover significant differences between renal transplant patients and healthy adolescents is open to two interpretations. First, it is possible that no differences exist in fact between these two categories of individuals, and that transplant patients do not resemble other categories of the chronically ill. Second, it is possible that a Type II error has been committed, and that differences do exist but were not uncovered due to inadequacies of the present research. Each of these possible interpretations is discussed below.

First, it might be argued that the renal transplant population is unique, and quite unlike other populations of the "disabled" or chronically ill. (The transplant population may even differ substantially from the general population of renal patients in dialysis.) If this assumption as to the unique nature of the transplant population is accepted, then the findings from the present study are not comparable to those of the previous studies cited above.

Some support for this view may be found in the literature on renal patients. Thus, Kaplan et al. (1968), Katz and Proctor (1969), and Short and Wilson (1969), have all found that denial is a major defense mechanism among dialysis and transplant patients. They suggest that due to the death-threatening nature of renal failure, persons suffering from that condition tend to deny illness more than do persons suffering from less dangerous forms of chronic illness. To the extent that transplant patients practice denial, one might expect that their body-image, self-concept, and self-esteem would approximate those of healthy individuals.

The present investigator encountered some evidence of denial among the subjects. Three of the transplant subjects responded negatively to the question: "Are you being treated for a long lasting illness presently?" Further inquiry revealed that these three subjects believed their kidney problems were totally resolved, and that their scheduled follow-up clinic appointments were routine physical examinations of the sort that anyone might experience.

A case might be made that denial occurs not so much as a defense against the threat of death, but as a consequence of the euphoria induced by steroid therapy. However, the observations of the investigator are not in accord with this viewpoint. In most instances, not euphoria but depression and anxiety appeared to mark the renal patients. As mentioned earlier, one 19-year old male refused to participate in the study, stating that he had learned to keep his feelings to himself all these years, and preferred it that way. This subject indicated that nothing could change the way things were. When encouraged to respond to a few of the items on the Body-Cathexis Scale, such as "waist", "height", and "overall appearance", he checked the statement "I don't like it at all and I wish it could be changed". In three additional transplant patients, the investigator noted despondency when they were told that they needed to return to the clinic at more frequent intervals than they had been coming. This despondency was expressed by negation, by a decrease in initiating conversation and verbal behavior, and in a general facial expression of dejection.

Finally, it should be mentioned that the present finding of "no difference" may be incorrect. A Type II error is a distinct possibility in view of the small sample size, and the sampling error therein entailed (See Siegel, 1965: 9-11).

Differences on Seven Specific Items between Transplant and Non-Transplant Subjects

As stated before, the hypothesis that transplant subjects would

express less satisfaction than healthy adolescents with seven bodily aspects (taken as a group) was supported. This finding accorded with the observations reported by Lilly et al. (1971), by Korsch et al. (1972), and by Gruskin et al. (1973). Of the seven items, height and health appeared to account for the major portion of the differences between the two groups of subjects. Patients' concerns with height were noted by the investigator during clinic visits as well. Patients commonly asked such questions as "Why am I not growing?", or made such statements as "I'm still the same height as the last time!" Since all but one of the renal transplant subjects were below the 30th percentile in development for their age category according to the Denver Scale for Physical Development, it is not surprising that height was a matter of concern for these individuals.

It might be additionally noted that height ranked first among the bodily concerns of normal healthy individuals of both sexes (Secord and Jourard, 1953; Clifford, 1971). The present findings suggest this normal worry about one's height may be further accentuated for adolescents who have undergone renal transplantation.

Congruence of Body-Satisfaction, Self-Satisfaction, and Self-Esteem

The correlations among the three tests for the normal healthy adolescents were in the predicted direction, but still not statistically significant. Neither was the correlation of Body-Cathexis to Self-

Cathexis significant for the transplant subjects. These findings were contrary to those obtained by Secord and Jourard (1953) for college students.

It is possible that the explanation for these results lies in the age composition of the present sample. Clifford (1971) found that neither the expression of body- or self-satisfaction was related to age for his subjects who ranged from 11 thru 19 years of age. It may be that the rapid physical and social growth which characterizes this age group tends to inhibit the emergence of a consistent self-concept. It may only be in late adolescence or early adulthood that body-image and self-concept coalesce and become congruent. If this argument is correct, then it would account for the significant correlation obtained between the two variables by Secord and Jourard (1953) for their somewhat older college-aged subjects. The argument also permits reconciliation of the findings of Secord and Jourard with those of the present investigator. However, this interpretation cannot explain why a stronger relation was found to exist between body-cathexis and self-esteem, and between self-cathexis and self-esteem for the transplant subjects than for the normal subjects of the present study. Again, it would seem more plausible to attribute the inconsistent findings of the present study to inadequate sampling. Again, it is the investigator's belief that a larger sample might well have revealed significant associations among all three variables, for both groups of subjects.

Sex Differences in Body-Cathexis, Self-Cathexis, and Self-Esteem

In this study no significant differences were found between the sexes in body image, self-concept, or self-esteem. Even the directions of the relationships were contrary to the investigator's hypothesis, in that female subjects demonstrated slightly more favorable perceptions of body and self than did the male subjects. These results do not accord with the findings of Clifford (1971), Schwab and Harmeling (1968), White and Wash (1965) and Meissner et al. (1967).

Berscheild, Walster, and Bohrnstedt (1973), have suggested several possible hypotheses which may account for the results of the present study. They hypothesized that men, in their attempt to gain power and status resort to direct physical means to a greater extent than do women. Men tend to incorporate internal drives, social position, and actual physical structures into body-image and self-concept more than women. By contrast, women tend to rely upon symbols such as clothes, jewelry, make-up and style for power and status rather than on bodily attributes. A second explanatory hypothesis advanced by Berscheild et al. was that boys more than girls are initiators and recipients of taunts, and hence may be more inclined to be dissatisfied with their bodies than girls.

The present results also agree with those of Fisher and Cleveland (1968). They noted that girls tend to develop a clear, defined picture of their sex role and identity at an earlier age than boys, and attributed this tendency to the earlier and shorter puberty period

of girls. They reasoned that girls may experience less disruption, confusion, and anxiety about sex role and body image than boys, and tend to regain their self-esteem and sense of competence more rapidly than boys. Thus, among chronically ill adolescents, bodily defects and incapacities may be even more problematic for males than females. To answer this question, further research is needed.

Limitations

Several limitations of this study are apparent. First, these findings are applicable only to renal transplant subjects of the particular age group. Second, it is now apparent that the inclusion of a group of dialysis patients in the analysis might have considerably improved the interpretability of the present findings. Thus, an evaluation of dialysis patients might permit testing the proposition that renal patients on dialysis view themselves as chronically ill and hence manifest low self-esteem and unfavorable body-image, whereas transplant patients view themselves as "cured" and hence develop more favorable attitudes to self and body. It is acknowledged that a longitudinal study of adolescents prior to and following transplantation would provide an ever better test of the proposition than a cross-sectional design. In the present instance, unfortunately no dialysis patients were available for study.

Third, problems of interpretation were posed by the small sample size of the present research. This failing was not remediable in

the present instance due to the extreme scarcity of appropriately aged renal patients in Oregon. The sample might be enlarged in the future by adding subjects as they become available.

A fourth limitation lies in the nature of the instruments utilized here, which depended on self-report. Such a self-inventory technique makes confirmation of results somewhat difficult since they may be a function of the respondents' tendency to appear socially desirable. Perhaps the tendency to social desirability might be counteracted to some degree through the identification of subjects' coping mechanisms. In the future, testing for denial before transplantation might permit the more accurate prediction of adaptation or decompensation following transplantation. Finally, the assessment instruments used may have lacked sufficient validity. However, the results of previous research are reassuring in this regard.

In conclusion, replication of the present study would no doubt increase confidence in the merit of the findings, and enlarge their applicability.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Recent experience with immunosuppressive therapy has contributed to the development of more successful transplantation programs for children and adolescents. However, little attention has been given to the adolescent transplant patient as a human being with complex needs beyond those which can be met by technical skill and biological manipulations. Often the interplay of psycho-social and medical factors has been ignored in providing post-operative care for adolescents who have undergone renal transplantation.

Transplantation offers a new opportunity to explore the role of internal organs in body image formation. To date only a few studies have examined the attitudes, thoughts, and reactions of kidney transplant patients to changes occurring in their bodies. These studies have for the most part employed projective techniques which prove unreliable and difficult to interpret. It was the purpose of this descriptive study to explore the impact of renal transplantation on body image by using a more reliable instrument which elicited direct responses from subjects regarding their attitudes to specific parts and functions of the body. In addition, this investigation was concerned with exploring the interrelationships of body image, self-

image, and self-esteem for two groups of adolescents; transplant and non-transplant subjects.

The hypotheses tested in this study were: (1) adolescents who have undergone renal transplants tend to express greater dissatisfaction with body image, self-concept, and self-esteem than their normal healthy counterparts; (2) females tend to express greater dissatisfaction with body image, self-concept than do males; (3) the inter-correlations among body cathexis, self-cathexis, and self-esteem are positive; (4) renal patients tend to express less satisfaction with seven particular body parts and functions affected by renal dysfunction. A fifth hypothesis that severity of illness tends to be negatively related to body cathexis, self-cathexis and self-esteem could not be tested due to a lack of variation in the renal functioning of the patients.

Adolescents who received renal transplants at the study institution were matched to healthy counterparts with regard to age, sex, and socio-economic status. The physical condition and renal functioning of each transplant patient was estimated by the attending physician using creatinine levels as guidelines. Body satisfaction, self-satisfaction, and self-esteem were measured respectively by Clifford's Modified Version of Secord's and Jourard's Body-Cathexis and Self-Cathexis Scales (1971), and by Rosenberg's Self-Esteem Scale (1965).

The prediction that adolescents who had undergone renal transplant would express more dissatisfaction than would normal adolescents

with their bodies, self-concepts, and self-esteem was not upheld. The hypotheses that females tend to express greater dissatisfaction with body and self, and tend to manifest lower self-esteem than males were negated. However, the prediction that body-cathexis, self-cathexis and self-esteem are positively correlated did receive partial support. Finally, renal transplant patients did express less satisfaction than did the healthy adolescents with at least two of seven specific body parts and functions affected by renal disease. Height and health were the two body items that proved particularly important.

It was concluded from these data that adolescents who have undergone renal transplantation do not differ significantly from normal healthy adolescents in regard to body image, self-concept, and self-esteem. This finding seems to suggest that perhaps renal transplantation is a favorable choice of treatment for adolescents who suffer from chronic renal failure. However, an alternative explanation that denial on the part of transplant patients causes the lack of differences between the two groups cannot be ruled out on the basis of present data. It is of course possible that this conclusion is incorrect, and that a real difference between the two groups was masked by research inadequacies such as small sample size and failure to control variables as personality type, parental attitudes, or social ties in the matching procedures.

Replication with a larger sample would appear desirable in order to diminish the possibility of both Type I and Type II errors.

Measurement of the tendency to utilize denial as a defense mechanism would also further clarify and contribute to the interpretation of the data. Finally, a longitudinal study of adolescents suffering from chronic renal failure would be most illuminating. It would be particularly desirable to obtain baseline pre-transplant data, during the dialysis stage to plot the course of attitudinal changes and to test the theory that transplantation reverses previous tendencies to low self-esteem and poor body image and stimulates more favorable self-concepts.

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APPENDICES

APPENDIX A

Body Image and Self Satisfaction Study Permit Form

BODY IMAGE AND SELF SATISFACTION STUDY PERMIT FORM

Subject's name: _____ Date _____

I hereby authorize Bernadette Pang RN, nurse researcher, to perform the following investigation requiring my cooperation:
Modified Body Cathexis-Self Cathexis Scales, and Rosenberg Scale.

I have been informed as to the nature of the tasks expected of me during this investigation. This includes answering questions by means of written questionnaires and inventories. Information that I divulge will be handled confidentially and used only for scientific publications or professional teaching programs.

The purpose of this study is to explore body image perceptions between adolescents who have received renal transplants and those who have not.

I will not directly benefit from the investigation, but the knowledge resulting from it may be useful in the long-term treatment of patients who have had renal transplants and adolescents in general.

I may withdraw my consent and discontinue participation in the investigation at any time without fear of impairment of the medical care I receive.

Subject's signature _____

Witness _____

If subject is a minor, complete the following:

Subject is a minor (age _____)

(Father)

(Mother)

(Guardian)

(Witness)

APPENDIX B

General Information Sheet

APPENDIX C

Transplant Information Sheet

Transplant Information Sheet

When were you first told about your kidney disease? _____

Have you ever had a kidney transplant? Yes _____ No _____

How many kidney transplants have you had? _____

When did you have your last kidney transplant? _____

In your opinion, how well is your present kidney transplant working?
(circle)

Very poorly Poorly Fair Good Very good

How much better do you feel now than when you did 1 month before transplant? (Circle)

Much worse Somewhat worse Same Somewhat better Much better

Please name a person (may be a friend, classmate, or relative) who lives in your neighborhood and is of the same age and sex that you are:

Name: _____

Address: _____

Phone Number: _____

APPENDIX D

Modified Body-Cathexis, Self-Cathexis Scales

(Clifford, 1971)

MODIFIED BODY-CATHEXIS SCALE

On the following pages are listed a number of things characteristic of yourself or related to you. You are asked to indicate which things you are satisfied with exactly as they are, which things you worry about and would like to change if it were possible, and which things you have no feeling about one way or the other.

Consider each item listed below and encircle the number which best represents your feelings according to the following scale:

1. I don't like it at all and I wish it could be changed.
2. I don't like it.
3. I have no special feelings about it one way or the other.
4. I am satisfied.
5. I am completely satisfied and I would not change it if I could.

	wish could change	don't like	no feeling	satis- fied	would not change
Myself	1	2	3	4	5
Tongue	1	2	3	4	5
Hands	1	2	3	4	5
Health	1	2	3	4	5
Fingers	1	2	3	4	5
Breathing	1	2	3	4	5
Feet	1	2	3	4	5
Walking	1	2	3	4	5
Sleeping	1	2	3	4	5
Chin	1	2	3	4	5
Shape of head	1	2	3	4	5
Neck	1	2	3	4	5
Digestion	1	2	3	4	5
Skin	1	2	3	4	5
Lips	1	2	3	4	5

	wish could change	don't like	no feeling	satis- fied	would not change
Back	1	2	3	4	5
Age	1	2	3	4	5
Eating	1	2	3	4	5
Knees	1	2	3	4	5
Eyes	1	2	3	4	5
Ankles	1	2	3	4	5
Ears	1	2	3	4	5
Arms	1	2	3	4	5
Energy level	1	2	3	4	5
Wrists	1	2	3	4	5
Shoulders	1	2	3	4	5
Voice	1	2	3	4	5
Appetite	1	2	3	4	5
Hair	1	2	3	4	5
Nose	1	2	3	4	5
Chest	1	2	3	4	5
Forehead	1	2	3	4	5
Legs	1	2	3	4	5
Hips	1	2	3	4	5
Face	1	2	3	4	5
Trunk	1	2	3	4	5
Talking	1	2	3	4	5
Height	1	2	3	4	5

1. I don't like it at all and I wish it could be changed.
2. I don't like it.
3. I have no special feelings about it one way or the other.
4. I am satisfied.
5. I am completely satisfied and I would not change it if I could.

	wish could change	don't like	no feeling	satis- fied	would not change
Speech	1	2	3	4	5
Looks	1	2	3	4	5
Posture	1	2	3	4	5
Running	1	2	3	4	5
Teeth	1	2	3	4	5
Waist	1	2	3	4	5
Weight	1	2	3	4	5
Facial Complexion	1	2	3	4	5
Distribution of hair over body	1	2	3	4	5
Body build	1	2	3	4	5
Elimination	1	2	3	4	5
Sexual development	1	2	3	4	5
Overall appearance	1	2	3	4	5

MODIFIED SELF-CATHEXIS SCALE

1. I don't like it at all and I wish it could be changed.
2. I don't like it.
3. I have no special feelings about it one way or the other.
4. I am satisfied.
5. I am completely satisfied and I would not change it if I could.

	wish could change	don't like	no feeling	satis- fied	would not change
My last name	1	2	3	4	5
My happiness	1	2	3	4	5
My dreams	1	2	3	4	5
My feelings	1	2	3	4	5
My imagination	1	2	3	4	5
The clothing I wear	1	2	3	4	5
My thoughts	1	2	3	4	5
How I understand myself	1	2	3	4	5
My conscience	1	2	3	4	5
My first name	1	2	3	4	5
My personality	1	2	3	4	5
How I do things	1	2	3	4	5
How other people like me	1	2	3	4	5
My manners	1	2	3	4	5
How I try something new	1	2	3	4	5
My neatness	1	2	3	4	5
My memory	1	2	3	4	5
My self confidence	1	2	3	4	5
My intelligence	1	2	3	4	5
How I do what I'm suppose to do	1	2	3	4	5

1. I don't like it at all and I wish it could be changed.
2. I don't like it.
3. I have no special feelings about it one way or the other.
4. I am satisfied.
5. I am completely satisfied and I would not change it if I could.

	wish could change	don't like	no feeling	satis- fied	would not change
How I work	1	2	3	4	5
How I meet people	1	2	3	4	5
My moods	1	2	3	4	5
My athletic skills	1	2	3	4	5
How popular I am	1	2	3	4	5
How I say things	1	2	3	4	5
My fears	1	2	3	4	5
My work in school	1	2	3	4	5
My handwriting	1	2	3	4	5

APPENDIX E

Rosenberg Self-Esteem Scale

(Rosenberg, 1965)

ROSENBERG SCALE

Please place a check before the word or words which best describe your feelings.

I feel that I'm a person of worth, at least on an equal plane with others.

- 1 ☐ Strongly agree
- 2 ☐ Agree
- 3 ☐ Disagree
- 4 ☐ Strongly disagree

I feel that I have a number of good qualities.

- 1 ☐ Strongly agree
- 2 ☐ Agree
- 3 ☐ Disagree
- 4 ☐ Strongly disagree

All in all, I am inclined to feel that I am a failure.

- 1 ☐ Strongly agree
- 2 ☐ Agree
- 3 ☐ Disagree
- 4 ☐ Strongly disagree

I am able to do things as well as most other people.

- 1 ☐ Strongly agree
- 2 ☐ Agree
- 3 ☐ Disagree
- 4 ☐ Strongly disagree

I feel I do not have much to be proud of.

- 1 ☐ Strongly agree
- 2 ☐ Agree
- 3 ☐ Disagree
- 4 ☐ Strongly disagree

I take a positive attitude toward myself.

- 1 ☐ Strongly agree
- 2 ☐ Agree
- 3 ☐ Disagree
- 4 ☐ Strongly disagree

On the whole, I am satisfied with myself.

- 1 ☐ Strongly agree
- 2 ☐ Agree
- 3 ☐ Disagree
- 4 ☐ Strongly disagree

I wish I could have more respect for myself.

- 1 ☐ Strongly agree
- 2 ☐ Agree
- 3 ☐ Disagree
- 4 ☐ Strongly disagree

I certainly feel useless at times.

- 1 ☐ Strongly agree
- 2 ☐ Agree
- 3 ☐ Disagree
- 4 ☐ Strongly disagree

At times I think I am no good at all.

- 1 ☐ Strongly agree
- 2 ☐ Agree
- 3 ☐ Disagree
- 4 ☐ Strongly disagree

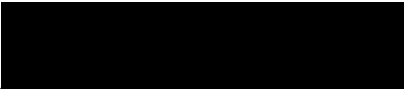
AN ABSTRACT OF THE FIELD STUDY OF

BERNADETTE Y. PANG

For the MASTER OF NURSING

Date receiving this degree: June 13, 1975

Title: A COMPARISON OF BODY IMAGE, SELF-CONCEPT, AND SELF-ESTEEM OF
NORMAL ADOLESCENTS AND ADOLESCENTS WHO HAVE UNDERGONE RENAL
TRANSPLANTATION

Approved: 

Julia Brown, Ph.D.

Field Study Advisor

The purpose of this descriptive study was to explore the impact of renal transplantation on body image, and to study the inter-relationships of body image, self-concept, and self-esteem among two groups of adolescents; transplant and non-transplant.

The hypotheses tested in the study were: (1) adolescents who have undergone renal transplants tend to express greater dissatisfaction with body image, self-concept, and self-esteem than their normal healthy counterparts; (2) females tend to express greater dissatisfaction with body image self-concept and self-esteem than do males; (3) body-cathexis, self-cathexis, and self-esteem are all positively related; (4) renal patients tend to express less satisfaction with seven particular body parts and functions (namely height, weight, sexual development, facial complexion, health, body build,

and elimination) than their normal healthy counterparts; and (5) severity of illness tends to be negatively related to body-cathexis.

Thirteen adolescents between the ages of 11 and 19 years of age who received renal transplants at the University of Oregon Medical Center were matched to healthy counterparts with regard to age, sex, and socio-economic status. Body satisfaction, self-concept and self-esteem were measured respectively by Clifford's Modified version of Secord's and Jourard's Body Cathexis-Self Cathexis Scales (1971) and Rosenberg's Self-Esteem Scale (1965). The scores for these scales were compared between the subjects of the two groups. The prediction that adolescents who had undergone renal transplant would express more dissatisfaction with their bodies, self-concept, and self-esteem was not upheld. The hypothesis that females tend to express greater dissatisfaction with body and self and manifest lower self-esteem than males were negated. However, the prediction that body cathexis, self-cathexis, and self-esteem are positively correlated did receive partial support. Renal patients did express less satisfaction with the seven specific body items than did the healthy adolescents. Height and health were found to be particularly important body items for transplant subjects. The hypothesis that severity of illness is negatively related to body cathexis could not be tested due to a lack of variability in the renal functioning of the patients.

It was concluded from the data that perhaps renal transplantation is a favorable choice of treatment for adolescents who suffer from

renal failure. However, an alternative explanation may be in part due to the denial by transplant subjects. This could not be ruled out on the basis of the present data.