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ABSTRACT

As part of a larger study of transplantation and chronic disease and the family, 124 children (10-18 years old) who were chronically ill with kidney disease (n=72) or were a year or more post-transplant (n=52) were included in a study focusing on the effects of chronic kidney disease and transplantation on children's psychosocial development. Ss along with their mothers and the "normal sibling" closest in age were interviewed with a survey questionnaire. The major difference revealed between the chronically ill, the transplanted children, and the controls involved body image, specifically satisfaction with looks. Compared to controls, the ill children were significantly less satisfied and the transplanted patients most dissatisfied because of growth retardation and the cushingoid appearance which results from steroid therapy. External ratings of disease severity reported by the physician and mother (including seriousness of condition, number of hospitalizations, and frequency of symptoms) were correlated with various aspects of the self; and in general, objective severity of the disease does seem to have disadvantageous effects, although the tendency to hide one's feelings is most significantly and consistently affected. Findings showed that the child's own perception of the disease as a significant problem seems to have a more pervasive effect on adjustment than objective ratings of disease severity. A set of background demographic factors was investigated, and it was found that variables generally affect sick and normal Ss similarly with urban children having higher self-esteem than rural children. (Author/SB)

Chronic Disease and Childhood Development:

Kidney Disease and Transplantation

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INTRODUCTION

Chronic illness is a significant problem in childhood with one out of ten children chronically ill by age 15 (Pless and Roghmann, 1971). Such long-term disease would be expected to challenge the coping mechanisms of both the child and his family. Pain, fatigue, and other symptoms, the trauma of hospitalization and treatment procedures, uncertainty of prognosis, and changes in the child's treatment by family and peers all would appear to provide sources of stress for the child (Mattsson, 1972).

The purpose of this research is to explore the effects of chronic illness on several dimensions of the child's socio-psychological development, particularly on multiple aspects of the self-image. As part of a larger study on the impact of kidney transplantation, this project focuses on chronic kidney disease and kidney transplantation in children. Major kidney disease is one of the serious chronic illnesses in childhood, and at least 10-15% of all kidney transplants are being given to children (Bernstein, 1971). Kidney transplantation in children, although much rarer than chronic kidney disease, is such an expensive new technology that ethical questions have been raised about its pyschological consequences and many centers have been reticent to transplant children (American Journal of Public Health, 1969). It would make little sense to spend huge sums of money on a method of physical rehabilitation which produced psychologically crippled youngsters.

Although there is a sizable literature on the chronically ill child, most of it is based on case-study type material and small samples, and unlike this study lacks standardized, quantitative measurement and normal controls (Richardson, 1961, Litman, 1974). A major exception is a large survey by Pless and Roghmann (1971), which does not explore multiple aspects of the self-image but does use quantitative measurement, and concludes that one-third of all chronically ill children develop secondary social and psychological problems. Korsch et al. (1973) use the California Test of Personality to measure a group of post-transplant children (N=51), and find that the overall adjustment scores of the patients did not differ from normal standard scores, but that social adjustment was significantly lower in the post-transplant group. And according to the Piers-Harris scale, there is some indication the patients may suffer lower self-esteem, although the control-group for this test was not really of adequate size (N=8). (See Bernstein 1971a, 1971b and Khan et al. 1971, for psychiatric studies of post-transplant children.)

The major focus of this study is upon the self-image of the ill child with the dual purpose of learning more about the impact of chronic disease, and of gaining a better understanding of the environmental factors that affect the various dimensions of the self-image itself. As a pervasive influence on a person's mental health and general adjustment, there are probably few factors as important as his picture of himself (See Rosenberg, 1965, Wiley 1961).

In a large study of 1918 normal school children in Baltimore, Simmons, Rosenberg, and Rosenberg (1973) showed that several dimensions of the self-image were particularly vulnerable to the stress of adolescence, and

therefore we might expect illness in adolescence to intensify the problem. First of all, global self-esteem, that is the child's overall positive or negative evaluation of himself, might be adversely affected by being impaired and different. Secondly, an increase in painful self-consciousness may accompany illness as it does normal adolescence. The self, which is different, may become so salient in interaction with others that the interaction becomes embarrassing for the individual. Third, the question arises whether the stability and certainty of the self-picture, the sense of identity, is shaken with the uncertainties related to changed health status, just as it is with the changes of early adolescence (See Lecky, 1945, Erikson, 1956). The body-image, or the child's satisfaction with his looks, may also be affected; since chronic kidney disease often retards growth and since the steroid medication given to the transplant patients frequently produces acne, a moon-face and a rotund figure, at least temporarily. Finally, the accorded self, the opinions he believes others hold of him, his estimates of his own popularity, which take a negative turn in normal adolescence might also respond unfavorably to the stress of being ill and different.

Other dimensions of the self-image will also be explored including the extent to which the ill child reveals his true feelings about himself to others, and his sense of being distinctive, or different. Aside from the self-image, the ill child will be compared to others in terms of his overall level of depressive affect.

METHOD

Subjects

The data reported in this paper are part of a larger study to assess the impact of chronic kidney disease upon the child and his family. A sample of 72 children, aged 10 to 20, were designated as having a significant and chronic disease by attending physicians from the University Renal Kidney Clinic. Many of the other children who attended this clinic had only acute and non-serious conditions, while we wished to study only those whose disease was chronic and serious. Therefore we interviewed only those children who had been under treatment for a year or more. This time criterion helped to insure that the disease was chronic, and also enabled us to concentrate on children and families whose coping mechanisms were likely to have achieved some stability. The physicians were asked to classify every patient who had an appointment at the Renal Clinic within the designated time period, and his identification of seriously ill children was largely based on the existence of the following major diseases: chronic pyelonephritis, chronic glomerulonephritis, polycystic kidney disease, congenital interstitial nephritis, diabetic glomeruscleroses, chronic end-stage renal disease, hypoplasia, aplasia, or lupus erythematosis.

All children who were so identified by the pediatricians between May, 1972 and October, 1973 and whose mothers confirmed on the telephone the child's age and the duration of treatment were interviewed, except one family which refused to cooperate. Hence we

have interviewed an entire population, rather than a sample, of the more seriously ill patients attending this clinic.

In addition, all children, age 8 to 20,* who had received a kidney transplant at the University before June, 1973 and had maintained it for at least a year were interviewed with the same questionnaire. This part of the study involved 52 post-transplant children.

In addition to the chronically ill patients themselves, 44 "normal siblings" closest in age to the sick child were interviewed with a similar schedule, and served as a control group. In 16 of the 72 families there were either no siblings at home or no siblings between the ages of 9 to 21. In 7 cases the out-of-town family could not arrange to have a normal sibling travel the long distance to the clinic, and in 2 cases an in-town sibling could not seem to arrange the time. Three other cases in which the sibling was not interviewed involved out-of-town children soon to receive a kidney transplant, and since the family members were being extensively studied quantitatively and qualitatively as part of the larger transplant study, we did not feel we could ask them to complete these questionnaires as well. Sixty-five mothers were also interviewed, thus providing three separate perspectives on the meaning of the disease to the child and his family. In one case, there was no mother; in another case the mother could not travel the long-distance to clinic, and 5 cases involved soon-to-be transplanted children whose mothers were being extensively studied in the larger research.

Since normal siblings may themselves be affected socially and psychologically by the disease in the home, an additional control group was used from a prior study of one of the authors (Rosenberg and Simmons, 1972). In a two-stage random sample study of Baltimore school children, 25 schools had been sampled and 1918 children from grades 3-12 had been interviewed,** with many of the same measures to be used here. Since

* Only two of these children are below 10.

** One school -- a combined elementary and junior high school --

(cont.)

the Baltimore sample is 63% black, we have attempted to make the sample more comparable by using only whites age 10-18.

Although this is a study of chronic kidney diseases, these illnesses seem similar to other chronic non-crippling diseases like asthma and diabetes. Like these diseases, the symptoms may vary widely among children with some children being actually asymptomatic and others suffering frequently from the disease. Number of hospitalizations, frequency of illness, degree of feeling sick, extent of therapy, and effect upon physical appearance vary from extreme to minimal. Prognosis and severity of the disease also vary among children, and do not correlate perfectly with symptomology. In some the disease is almost certain to progress to a terminal stage and to potential kidney transplantation; among other children, like those with lupus erythematosis, additional aspects of the disease are also life-threatening and may not be alleviated by a transplant. In still other cases the prognosis is completely uncertain with serious deterioration and fairly normal function both being possible. In many cases the child is unlikely to have severe problems, but must be treated or watched in case.

The kidney transplant patient is a special type -- supposedly returned from near death to normal health and activity levels, but tied like the diabetic patient to a daily regimen of medication, frequent medical check-up, and uncertain long-term prognosis.

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was entered twice in the total population of schools and, by chance, was selected in both categories. It was not practicable to double the sample size of this school; hence, the responses of these thirty-five elementary school children and those of the thirty-six junior high school children were doubled in weight to better represent the total population. In analysis, the sample was thus treated as 1988 children.

Procedure and Measures

Family members were interviewed with survey questionnaires, including closed as well as open-ended items. The mothers also completed a written questionnaire which provided background data. The mothers were interviewed extensively regarding their reactions to the disease, its impact on the child and family. The children's interview forms were in two parts. The first part contained scales and scores derived from the Baltimore study to measure depressive affects and various aspects of the self-image: self-esteem, stability of the self-concept, self-consciousness, estimate of popularity and satisfaction with looks. (See Appendix for the exact items in the scales and scores.)

Table 1 summarizes the reliability of the scales in terms of scalability and Cronbach's alph (See Bohrnstedt, 1969). For the most part the scales seem satisfactory either in the Guttman coefficients or in Cronbach's alpha. However, "stability of self" does considerably less well in this study than in the prior Baltimore research. It should be noted that the Guttman scales were developed on a very large sample, and in consequence there were sizable numbers of children at both extremes. The cutting-points for many items on these scales were designed to be sensitive to those particularly distressed children who scored at the least favorable extreme. In a smaller sample, the same percentage may score at the unfavorable extreme but the numbers become very small and the scale coefficients therefore are somewhat less good in places. A cutting-point in one item in the Baltimore depression scale was changed so that there would be enough cases classified as "depressed" for subsequent analysis. As a result, the Baltimore scalability coefficient dropped, while that of the ill children remains satisfactory. For

discussions of validity of some of these scales see Rosenberg and Simmons (1972) and Simmons, Rosenberg, and Rosenberg, 1973.

In addition to self-image scales and scores, the children's and siblings' questionnaires dealt specifically with the disease and the problems it caused the child and family.

A physician rating form provided an external rating of the severity of the child's medical condition and prognosis.

RESULTS

How does the child with chronic disease fare in terms of his socio-emotional adjustment? The major difference between the ill and healthy children involves their body-image, their satisfaction with their looks. (See Table 2) Only along this dimension do the ill and transplanted children appear to suffer. The greatest degree of dissatisfaction with looks is demonstrated by post-transplant children: 55% of them and 39% of the chronically ill are classified as "not satisfied" compared to only 28% of the siblings and 22% of the Baltimore controls ($p < .001$). The transplanted children are undoubtedly distressed by the side effects of their steroid medication--the "cushingoid" moon face and rotund figure. The growth of the adolescent girls is likely to be retarded if the kidney disease has occurred before the pubertal growth spurt.

Apart from dissatisfaction with looks, other dimensions of the self-image appear surprisingly undamaged in the total sample of ill children. Self-esteem, self-consciousness, self-image stability, a sense of distinctiveness,* felt ability to reveal true feelings and estimates of popularity are all unhurt.**

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*In fact Table 2 indicates that transplant children are significantly less likely than other youth to admit to being different. Whether denial or some other mechanism is operating here is unclear.

**Table 2 does show that the Baltimore children are significantly more likely than any of the Minnesota groups to score high in self-consciousness. If a Chi Square test is performed on the other three groups, eliminating the Baltimore sample, there is no significant difference.

For the bulk of the chronically ill children, the level of depression also appears no worse than that of the controls (See Table 2). Yet there are a very few patients who show severe evidence of depression, according to their mothers or physicians. Four chronically ill adolescents made suicidal attempts or threats, as did three post-transplant adolescents, one of whom actually committed suicide after his new kidney was immunologically rejected and surgically removed. Among the four chronically ill suicidal patients were two youngsters heading for kidney transplantation, each of whom had watched a relative die after an unsuccessful transplant. The other two suicidal patients were among the ten patients who had lupus erythematosis, a particularly severe disease affecting the kidney as well as other systems.

Other than for a few extreme cases then, is the stress of chronic illness and kidney transplantation exaggerated? It would be premature to reach this conclusion before investigating whether certain sub-groups within the population of ill children are more severely effected by the disease than others. The literature suggests certain factors which may impinge on the sick child's adjustment: the seriousness of the disease (Pless et al., 1971), the actual symptomatology of being sick (Eichorn and Andersen, 1962), the visibility of the disease (McAnarney et al, 1974, Goldberg, 1974), the patient's perception and definition of the illness (Eichorn and Andersen, Cfford and Aponte, 1967).

Objective Severity of the Disease

The first set of factors explored were those which could be judged relatively objectively by external persons--in this case the child's

mother and physician (See Table 3). Do those children who in reality are sicker show greater disturbance of the self-picture and greater depressive affect? Table 3 presents the effect of objective illness on those variables where there is a clear direction of association, negative or positive.* The physician was asked to classify the seriousness of each child's illness. Those children who suffer from more serious diseases show somewhat higher depression, a higher level of self-consciousness, and a greater tendency to hide their innermost thoughts from others. Children who have been hospitalized more frequently are the ones whose level of depression is highest, and who suffer on a variety of self-image variables.

The mother was asked how often the child was ill. As Table 3 shows, those children who are ill more frequently are again more depressed, again less likely to reveal their true feelings to others, and they also believe themselves to be less popular with others. If the child's looks have been affected by the disease, according to an outside observer, he is considerably more dissatisfied with his looks and he is less likely to exhibit high self-esteem (although his level of depression is not consistent with these findings). In general then, the objective severity of the disease seems to have disadvantageous effects, although the tendency to hide one's true feelings are more consistently affected than any other dimensions of the self-picture. Several aspects of the self-image are unaffected either by being ill frequently or by the objective seriousness of the disease.

The Child's Perception of the Disease

The next set of factors examines the importance of the child's

*Those variables presented in Table 2, but not in Table 3 are ones which show no clear relationship to the measures of objective severity of the disease.

perception of his disease. We asked the child

> How great a problem is it for you that you have something wrong with your kidney? Is it a very big problem, a little problem, or no problem for you?
>
> When you are feeling very sick because of your kidney disease, how badly do you feel? Do you feel very sick, somewhat sick, or a little sick?*
>
> Do you think that (your kidney disease) affects the way you look? Does it make you look different or not?

Table 4 shows that the children's perception of the impact of their disease is associated with depressive affect and almost all of the dimensions of the self-picture originally listed in Table 2. If the children perceive their disease as having negative effects, they are more likely to be depressed and more likely to show self-image disturbance. First of all, they indicate a lower self-esteem: 64% of the children who see their disease as a great problem exhibit low self-esteem compared to 18% of those who say their disease is "no problem;" 36% of those who say they feel very badly when sick score low in self-esteem in contrast to only 24% of those who say they do not feel ill. They are also more likely to feel self-conscious and unpopular, and they are less likely to be willing to reveal true feelings to others. If the children perceive their disease to be a great problem, adverse adjustment occurs in 8 out of the 9 dependent variables. If they feel very sick when ill, again 6 of the dependent variables are disturbed. (One additional variable, however, that is, "satisfaction with looks" appears to be related to perceived illness but in a direction opposite from predicted). The children who feel that the disease has made them

*In dichotomizing this item -- "very and somewhat" were collapsed and contrasted to "a little sick."

look different show more evidence of low self-esteem and low satisfaction with their looks.

With a cross-sectional study it is impossible to be certain of the causal direction here. Perhaps those children who perceive the disease to be a great problem react to this perception with a less favorable self-image and level of happiness. If the above is the major causal direction, then we could conclude that the child's own subjective experience has more extensive and pervasive effects than the objective severity of his disease. However, it is also possible that those children who previously suffered from low esteem and a high degree of depression are the ones who are least able to cope with the disease and are most likely to perceive it as a major problem.

Status and Demographic Factors

Other than differences due to disease severity, is the adjustment of these children related to their major statuses or to their background? In the Baltimore study, Simmons, Rosenberg and Rosenberg (1973) found that disturbance in the self-image was related to age. Early adolescents showed higher self-consciousness, greater instability of the self-image, slightly lowered self-esteem, and greater depression than children from age 8-11. All differences were particularly marked at the point of transition into junior high school, and the drop in self-esteem occurred only during that one year. In later adolescence (age 15-18), some of these negative changes (self-esteem, stability) reversed themselves and improved, and others (self-consciousness, depression) leveled off and remained as they were in early adolescence without either further

deterioration or improvement. Global self-esteem, unlike any other dimension, became more favorable in late adolescence than it had been in childhood (age 8-11).

In this study of chronically ill children we find that age significantly affects three indicators of adjustment: depression, self-consciousness and global self-esteem (Table 5). As in the Baltimore sample, depression and self-consciousness increase among the chronically ill children in adolescence, with the big increase occurring in the early teenage years. Among the siblings also, the older adolescents are more self-conscious and depressed than the young children. However, the role of early adolescence in changing the level of self-consciousness is less clear among the siblings -- there is a decrease in both the proportion who demonstrate high self-consciousness and the proportion at the other extreme who are low in self-consciousness.

Both the sick children and their siblings show a steady increase in self-esteem with age. Whether or not these findings are masking a short one-year drop in self-esteem at age 12 when the children move into junior high school is impossible to tell with these small numbers of cases. In any case, like the Baltimore children, the older adolescents demonstrate higher self-esteem than any other age child. The improvement appears more dramatic for the siblings than for the ill children. In childhood the siblings seem to show lower self-esteem than their ill brothers and sisters; in late adolescence the situation is reversed with the ill patients more likely to exhibit low self-esteem. Based on these findings, one could hypothesize that having an ill sibling is more detrimental for the self-image of the young child and early adolescent, than it is for the older adolescent.

In general, however, the effects of age upon the self-image appear to be reflective of general differences found among all children, rather than a consequence of chronic illness in particular.

The sex of the child might also be expected to have a general impact upon his or her self-image regardless of the illness. In the Baltimore study (See Simmons and F. Rosenberg, 1975), adolescent girls (particularly white girls) exhibited markedly higher self-consciousness, lower stability of the self-picture, slightly lower self-esteem, and a greater dissatisfaction with their looks, than did adolescent boys. Although girls exhibited more disturbance in their self-image, they were not more depressed than boys. In fact, Hathaway and Monachesi (1963) found that girls showed less depression on the MMPI.

In this study the child's sex is also found to be associated with his or her satisfaction with looks, stability of the self-concept and level of depressive affect. (Table 5). For both the sick children and their siblings, once again females are generally less well off than the male children on the self-image and body-image variables but better off in terms of depression. For example, 49% of the sick girls are dissatisfied with their looks, in contrast to only 26% of the sick boys.*

Family Size and Place of Residence

Several studies conducted in the 1930's and '40's hypothesized that rural life would be more beneficial than urban for the adjustment of the child (Mangus, 1949). Yet these studies did not show rural children scoring higher than big city children in the California Test of Personality (Mangus, p. 14), although they do better than youngsters in

*We indicated earlier that a major difference between the ill child and his sibling involved satisfaction with looks, with the ill child scoring more adversely. However, this difference only holds for boys. Normal girls (siblings) are actually more dissatisfied with their looks than are the ill girls.

a small city. Since Minnesota is largely a rural state and the clinic draws patients from throughout the state, it seems reasonable to further explore rural-urban differences. Table 6 shows that rural youngsters (both the ill children and the siblings) score lower in self-esteem, are more dissatisfied with their looks, and are less likely to reveal their true feelings to others.* This difference between the self-esteem of the urban and rural child begins in adolescence -- there is little difference between the 8-11 year olds based on residence. Clearly rural life does not protect the self-image of the child; on the contrary, it appears detrimental. Once again, although there are some differences between the siblings' and the ill children's response to rural residence, the data suggest that the disadvantage of rural life is a general one for all children, rather than a particular reaction to chronic illness.

Why should rural residence be associated with lower self-esteem? We could hypothesize that it is due to the fact that rural families tend to be larger (our data do show the farm families to be larger). Perhaps in small families, which are more common in the city, children receive more parental attention to the benefit of their self-esteem.

Table 6 indicates that large family size does appear to be associated with detrimental self-image effects, although not totally consistently. Both sick children and their siblings are much less likely to reveal their true feelings if they live in a large family. Likewise, children from large families, whether sick or healthy, are more likely to be highly self-conscious. Also, sick children are less likely to perceive themselves as popular with peers if they come from a large family (80% vs. 54%), although siblings do not show a consistent pattern. The self-esteem

*The effect of residence on depression and stability are less clear: Among the ill children, the findings are consistent with the above. The rural youngsters are slightly more likely to show high depression (41% vs. 32%), and less likely to show stable self-images (32% vs. 44%). But among the siblings, the rural children are slightly more likely to show low depression (23% vs. 14%), and the stability findings are unclear and inconsistent.

of the siblings is also negatively affected by being in a large family: 46% of siblings from large families have low self-esteem in contrast to only 33% from small families. However, the self-esteem of the ill children is unaffected by family size, and thus the rural-urban differences in their self-esteem could not be due to family size differentials.

Table 7 demonstrates the interaction between rural-urban residence and family size in affecting the self-esteem. The numbers of cases in the cells, however, become small; and therefore results must be interpreted cautiously. However, it appears clear that regardless of family size, and regardless whether one is ill or not, self-esteem is lower in the rural environment than it is in the urban environment. Furthermore, the data suggest that this tendency toward lower self-esteem is worse in small rural families: sick children seem to fare worst in small rural families in terms of self-esteem, and best in small urban families. Although the number of cases becomes small, we can see that among the children who live in the rural areas 71% of those from small families have low self-esteem in contrast to only 40% from larger families. On the other hand, in the city 47% of children from small families demonstrate high self-esteem in comparison to only 30% of those from large families.

One could hypothesize that, if true, such findings could be due to the differing roles children play in rural and urban families. In the rural family the sick child is more likely to fill an important productive role, that is, to help with farm and household chores, particularly in adolescence. In a small family where there is no substitute, the loss of

this role, the inability of the sick child to carry his weight, may be felt more acutely and may make him feel less worthwhile as a person. If he is sick enough to also draw another family member, like the mother, away from full participation in household or farm chores, the problem may be intensified. On the other hand, a large family on the farm can probably absorb one unproductive member, and it can better distribute any caretaking load among the several members available.

In the city, the child is not needed to help in the economic activities of the family, and a small family may be beneficial because it allows him more parental attention. The mother has fewer other children to whom she must give her time. In the city, the sibling's self-esteem also appears to benefit from being in a smaller rather than larger family. There are too few cases of siblings living in the rural area to examine the effect of rural family size upon the normal child's self-image.

Since the urban small family seems better able to cope with the disease at least in terms of the ill child's self-esteem, we were interested in the extent to which family size and residence might affect the child's perception of his or her disease as a problem. (See Table 8) The child in an urban small family is indeed least likely to define the disease as a problem. Sixty-five percent of such children say the disease is "no problem" in contrast to 43%, 40%, and 20% of the other family types. Regardless of family size, rural children are more likely than urban to describe their disease as a "very great problem."

Father's Education

If differences in family size do not explain the greater disadvantage of rural life for the child's self-picture, it is possible that social class differences may. Rosenberg and Simmons (1972) showed that among the white children from Baltimore, a higher social class background was associated with higher self-esteem -- presumably because of the social comparison processes that occur in the schools. Using father's education as an indicator of social class, we find that the rural fathers are less educated than the urban fathers: 50% of the rural fathers have not graduated from high school in contrast to only 18% of the urban fathers.

Do those ill children from less educated families demonstrate a more unfavorable self-picture? Overall, Table 9 indicates that the results are inconsistent for the ill children. While ill children from less educated backgrounds are less likely to reveal their feelings to others (just like the rural children), and are less likely to perceive themselves as popular, the effects on self-esteem and depression are unclear; and a lower education, if anything, appears favorable in terms of the stability of the self-picture. Siblings from less educated families do show lower self-esteem and a lesser tendency to reveal their feelings to others (Table 9); they also are more likely to exhibit high self-consciousness, high depressive affect, and a greater feeling of being different. However, education differences cannot explain why ill children have lower self-esteem in the rural area, since educational background is not clearly related to self-esteem for them.

In fact, when education is controlled for both the siblings and the children, the difference between rural and urban children remains.

DISCUSSION AND CONCLUSION

In summary both the chronically ill children as a group and the children with long-term kidney transplants appear to be quite healthy in terms of their self-image and socio-emotional adjustment. Although they are clearly more dissatisfied with their physical appearance, these children are not more disturbed than normal controls in regard to their level of self-esteem, self-consciousness, self-image stability, sense of distinctiveness, ability to reveal true feelings to others, or level of depressive affect. Yet there is some indication that among the chronically ill, those who are more seriously ill according to objective standards fare less well emotionally; they are particularly more likely to demonstrate high depressive affect.

The child's perception of the impact of this disease is, however, associated more pervasively with the self-image variables than is the objective reality. If the child perceives himself to have a greater health problem, he is also likely to show disturbance on almost all aspects of his self-picture. With a cross-sectional study, we cannot be certain whether the child's perception is itself damaging his self-attitudes, or whether those children who originally had unfavorable self-pictures are the ones who cope least well with the disease and define it as a greater problem.

There are many status and background factors which appear to be detrimental for the ill child's adjustment; but they also appear disadvantageous in the control groups for the normal child's well-being. It is likely then that most of these differences among the chronically sick are reflective of general childhood differences rather than of special processes occurring in chronic illness. Thus, adolescents are more self-conscious and depressed than young children, older adolescents have a more favorable self-esteem, boys show more favorable adjustment than girls along some self-image dimensions, and children from rural families have less high self-esteem than urban children.

Family size, however, may have a differing impact depending on whether the child is ill and whether he comes from a rural or urban area. In terms of self-esteem, all children from the urban areas, whether ill or "normal siblings," fare better in small families probably due to increased attention from the parents. In the rural area there are only a few children from small families in the sample, but they appear to show lower self-esteem than those rural children who are from large families. If such a finding is replicable, we would hypothesize that the child's self-picture suffers from his being unable to participate in the normal economic roles expected of a farm child but not of an urban child.

Differences in father's education (as an indicator of social class) do not explain the rural-urban differences in self-esteem. Lower social class background appears to be detrimental for the self-image of the normal sibling, but does not have clear effects upon the ill child.

The findings leave us then with a puzzle. Why do the ill children do so well in terms of their self-picture? Simmons and Schilling (1974) show that on almost all these same dimensions pre-transplant adults who were suffering from end-stage kidney disease showed considerably less favorable adjustment than did the same patients after the kidney transplant. Why don't the chronically ill children demonstrate a less favorable self-picture than the kidney transplant youngsters?

We can offer several hypotheses. First, the majority of these children were considerably less ill and less symptomatic than the pre-transplant adults, and we have seen that those children who suffer from more serious disease do show more socio-emotional disturbance (See McAnarney, 1974, Goldberg, 1974 for discussions of the importance of the visibility of the disease). Secondly, it may be easier for ill children to be protected than for adults. An ill adult is less likely to be able to continue his major functional role. For the most part, a chronically ill child can still attend school, even if restrictions or absenteeism are more frequent. An ill adult may not be able to maintain a full-time job or adequate house and child care activities. Such curtailing of the major functional role would be expected to be detrimental for the self-picture (as we have suggested in the specific case of rural children in a small family).

In addition, the parents can give the child emotional protection that is unavailable for the adult. First of all, the parent can help the child to deny the seriousness of his condition (Salk et al, 1972, Mattson and Gross, 1966). Along with this denial is a philosophy endorsed by physicians to treat the child "normally" (Collier, 1969;

Mattson and Gross, 1966; Minde, 1972). In fact, the mothers in this study almost universally agree with the statement that the patient "should be treated completely the same as other children." Despite this ideology, however, these children were given extra attention to maintain their normalcy.

In addition to the ability of the parents to label the ill child as "normal," they can also protect them through extra love and attention. Rosenberg (1965) and Rosenberg and Simmons (1972) show that the most powerful variables affecting children's self-images are the perceived opinions of significant others. If children believe that others rate them highly, they rate themselves highly. We have already seen that the ill children do not perceive themselves to be any less popular among peers. What is probably more important is that they are even more likely than the controls to see their mothers rating them highly. In answer to a multiple-choice question*, forty-three percent of the chronically ill children report that their mothers think of them as a "wonderful person," in comparison to 36% of their siblings and only 26% of the Baltimore control children. In addition, when asked to which family member they are closest, 29% of the sick children in contrast to 18% of the siblings choose their mother. They are also somewhat more likely than their own siblings to see themselves as the mother's favorite (14% versus 7%). The siblings, in contrast, are more likely to choose the father as closest (7% versus 20%). The interaction pattern in the family is thus altered by the illness with the ill children perceiving a special alliance to their mother.

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*Would you say your mother think you are a wonderful person, a pretty nice person, a little bit of a nice person, or not such a nice person?

This favorable opinion of the mother is undoubtedly protective for the children's self-image; our data indicate that those children who report that their mothers think they are "wonderful person(s)" score more favorably in terms of their self-esteem, level of self-consciousness, stability of the self-picture, satisfaction with looks, and ability to reveal their true feelings to others.

Crain et al. (1966) did a similar study of the socio-psychological functioning of 19 diabetic children and 16 of their siblings. They too found that the functioning of the sick children did not differ significantly from that of their siblings. Furthermore, in trying to explain the lack of difference they showed that 1) the diabetic children were closer than their siblings to the mother, and 2) the mother's behavior was significantly related to the ill children's performance. Both studies suggest that there are costs for siblings in a family with a sick child, and that closeness with the mother helps the ill child himself to compensate for the potential stress of chronic ill-health. That the sibling loses some maternal attention also helps to explain why the differences between siblings and ill children are not greater, or always in the predicted direction.

A final factor which may help explain the lack of difference between the chronically ill children and the healthy controls involves unexpected personality gains resulting from the illness. We asked the mothers, siblings, and children what changes the disease had affected in the child. Although 14 siblings and 19 mothers mention negative personality changes (touchiness, irritability, withdrawal) in the ill child, 21 mothers commented on positive personality changes including

increased maturity and appreciation of life. Among the children themselves, 8 also mention this new maturity and life-appreciation, while only 2 admit to negative personality changes. More important than either for the children seemed to be negative body changes (10 cases), decreased energy (10 cases), and activity restrictions (10 cases). In terms of personality impact, however, the child and his mother tend to perceive the effects as more positive than negative.

In sum, the frequent low visibility character of the disease, the fact that many children lack extensive symptomatology, the continuing high opinion of significant others, the special emotional closeness to the mother, and an increased appreciation of life may all mediate to protect many of the chronically ill children against self-image deterioration. In addition, in terms of a social-psychological evaluation of kidney transplantation, our evidence indicates that despite the stresses of transplantation most children emerge psychologically healthy.

REFERENCES

_____, "Should we transplant organs or efforts," American Journal of Public Health, September 1969, 59 1567-8.

Bernstein, D. M. "After transplanation--the child's emotional reactions." American Journal of Psychiatry, 127:9, March 1971, 1189-1193.

Bernstein, D. M. "Emotional reactions of children and adolescents to renal transplantation," Child Psychiatry and Human Development, 1971a, Vol. 1-2, Spring.

Bernstein, D. M., "After transplantation--the child's emotional reactions," American Journal of Psychiatry, 1971b, 127-9 1189-1193, March. To be reprinted in Annual Progress in Child Psychiatry and Child Development. (Ed. Stella Chase, M.D., and Alexander Thomas, M.D.), Brunner Mazel, Publisher, New York City, 1972.

Bohrnstedt, G. W. "A quick method for determining the reliability and validity of multiple-item scales." American Sociological Review, 34, No. 4, August, 1969, 542-48.

Collier, B. N., Jr. "Comparisons between adolescents with and without diabetes." Personal and Guidance Journal, March, 1969, 679-684.

Crain, A. J., Sussman, M. B., and Weil, W. B., Jr. "Family interaction, diabetes, and sibling relationships." The International Journal of Social Psychiatry, vol. xii, No. 1, 1966.

Eichorn, R. L., and Andersen, R. M. "Changes in personal adjustment to perceived and medically established heart disease: a panel study." Journal Health Social Behavior, v. 3, 1962, 242-249.

Erikson, E. H., "The problem of ego-identity." Journal of American Psychoanalytic Association, 1956, IV, 1, 53-121.

Goldberg, R. T. "Adjustment of children with invisible and visible handicaps: congenital heart disease and facial burns." Journal of Counseling Psychology, 1974, v. 21, #5, 428-432.

Khan, A. U., Herndon, C. H. and Ahmadian, S. Y. "Social and Emotional adaptations of children with transplanted kidneys and chronic hemodialysis." American Journal of Psychiatry, 127:9, March 1971, 1194-1198.

Hathaway, S. T. and Monachesi, E. D. Adolescent Personality and Behavior: MMPI Patterns of Normal, Delinquent, Dropout, and Other Outcomes. Minneapolis: The University of Minnesota Press, 1963.

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

Lecky, P. Self-Consistency. New York: Island Press, 1945.

Lederer, H. "How the sick view their world," in E. J. Jaco, Patients, Physicians, and Illness. Glenco, Illinois: The Free Press, 1960. Ch. 26.

Litman, T. , "The Family as a basic unit in health and medical care: a social-behavioral overview." Social Science and Medicine, 1974, 8:495-519.

Mangus, A. R. "Mental Health of rural children in Ohio." Ohio Agricultural Experiment Station Research Bulletin 682, March, 1949, 3-34.

Mattsson, A. "Long-term physical illness in childhood: a challenge to psychosocial adaptation." Pediatrics ,v. 50, no. 5, November, 1972, 801-811.

Mattsson,A., and Gross, S. "Social and behavioral studies on hemophilic children and their families," Journal of Pediatrics, v. 68:2, 1966, 952-964.

McAnarney, E. R., Pless, B., Satterwhite, B., and Friedman, S. B. "Psychological problems of children with chronic juvenile arthritis." Pediatrics, v. 53, #4, April 1974, 523-528.

Minde, K. K., Hackett, J. D., Killou, D., and Silver, S. "How they grow up: 41 physically handicapped children and their families." American Journal of Psychiatry, 128:12, June 1972, 1554-1560.

Offord, D. R., and Aponte, J. F. "Distortion of disability and effect on family life. American Academy of Child Psychiatry Journal, 1967, v. 6, 499-498.

Pless, I. B., and Roghmann, K. J. "Chronic illness and its consequences: observations based on three epidemiologic surveys." Journal of Pediatrics, v. 79, #3, Sept. 1971, 351-359.

Richardson, S. A., Goodman, N., Hastorf, A. H., and Dornbusch, S. M. "Cultural uniformity in reaction to physical disabilities," American Sociological Review, 26:241-7, 1961.

Rosenberg, M., Society and the Adolescent Self-Image. Princeton: Princeton University Press, 1965.

Rosenberg, M., and Simmons, R. G., "Black and white self-esteem: the urban school child," 1972, Arnold M. and Caroline Rose Monograph Series, American Sociological Association.

Salk, L., Hilgartner, M., and Granich, B. "The psycho-social impact of hemophilia on the patient and his family." Social Science and Medicine, 1972, v. 6, 491-505.

Simmons, R. G. and Rosenberg, F. L. "Sex, Sex-Roles, and Self-Image," Submitted. 1975.

Simmons, R. G., Rosenberg, F., and Rosenberg, M., "Disturbance in the self-image at adolescence." American Sociological Review, 1973, 38 1973, (Oct.): 553-568.

Simmons, R. G. and Schilling, K. J., "The Social and Psychological Rehabilitation of the Diabetic Transplant Patient," Kidney International, Oct., vol. 6, No. 4, Supplement No. 1, S152-S158.

Wiley, R. C. The Self-Concept. Lincoln, Nebraska: University of Nebraska Press, 1961.

Table 1. Guttman Scale Coefficients and Cronbach's Alpha for Baltimore and Ill Children

	Baltimore Normals		Sick Children
Self-Esteem			
Coefficient of reproducibility	.902		.857
Coefficient of scalability	.676		.603
Cronbach's Alpha			.62
Self-Consciousness			
Coefficient of reproducibility	.894		.814
Coefficient of scalability	.625		.394
Cronbach's Alpha			.67
Stability			
Coefficient of reproducibility	.891		.818
Coefficient of scalability	.648		.338
Cronbach's Alpha			.37
Depression	Original	Revised	Revised
Coefficient of reproducibility	.922	.903	.944
Coefficient of scalability	.695	.410	.600
Cronbach's Alpha			.33

Table 2. Social-Emotional Adjustment for Sick Children and Normal Controls

	Baltimore* (N=621) %	Sick Children (N=72) %	Normal Siblings (N=44) %	Post-Transplant Children (N=52) %	
Depression					
Low	12	14	16	23	
Medium	46	51	44	43	
High	42	35	40	34	
	100%	100%	100%	100%	
Self-Image					
Self-Esteem					
Low	37	31	42	39	
Medium	29	37	25	33	
High	33	32	33	28	
	100%	100%	100%	100%	
Self-Consciousness					
Low	19	44	41	48	
Medium	44	42	46	36	$p < .001$
High	37	15	14	16	
	100%	100%	100%	100%	
Stability of self-picture					
Low	38	35	46	36	
Medium	21	28	20	16	
High	35	37	33	35	
	100%	100%	100%	100%	
Sense of Distinctiveness					
Not Different	11	16	5	22	
Little Different	26	33	27	75	$p<.004$
Very Different	63	51	68	3	
	100%	100%	100%	100%	
Body-Image, Satisfied with Looks					
Not Satisfied	22	39	28	55	
A little Satisfied	42	36	40	36	$p<.001$
Very Satisfied	35	25	32	8	
	100%	100%	100%	100%	
Relationship to Others					
Show True Feelings					
Not Show	30	26	29	22	
Show little	51	44	41	47	
Show lot	20	29	29	31	
	100%	100%	100%	100%	
Estimate of Popularity					
Not Popular	8	7	7	14	
Little Popular	23	28	20	23	
Very Popular	69	65	72	63	
	100%	100%	100%	100%	
Anxiety					
High	11	12	14	12	
Medium	54	53	54	54	
Low	34	34	32	33	
	100%	100%	100%	100%	

* Using only white children ages 10-18.

Table 3

Effect on Child of Objective Severity of the Disease

Pearson's Correlations*

	Source: Physician	Source: Mother	
Child's Emotional State:	Physician's Rating of Seriousness of Disease	Number of Hospitalizations Child Has Had	Frequency of Child Being Ill
Depressive Affect	.14	.14	.33 p = .005
Self-Esteem			.15
Self-Consciousness	.13		
Stability of the Self-Picture			-.13
Sense of Being Distinctive, Different		.09	.26 p = .02
Satisfaction with One's Looks			.11
Showing True Feelings to Others	.16 p = .10	.20 p = .05	.21 p = .04
Estimate of Popularity			.25 p = .02
Anxiety			.16 p = .11
CANNONICAL CORRELATION % COMMON VARIANCE	.34 12%	.37 14%	.53 28%

* A positive correlation indicates that a favorable rating on one variable is related to a favorable rating on the other. Low depression, low self-consciousness, high satisfaction with looks, a high estimate of popularity, showing one's feelings to others, and less severe objective effects of the disease are considered favorable.

Table 3. Effect on Child of Objective Severity of the Disease*

	Source: Physician			Source: Mother								
	Rating of Seriousness of Disease			Number of Hospitalizations			Effects of Disease on Child's Appearance			How Often is Child Sick		
	Disease Serious	Disease not Serious	gamma**	Zero to 4 times	5 times or more	gamma	Affects Appearance	No Effect	gamma	Not Often	Often†	gamma
% high in depression	42% (38)	27% (30)	.252	30% (40)	50% (22)	.268	34% (38)	44% (23)	-.208	24% (33)	50% (28)	.545 p = .04
% high in self-esteem							22% (41)	46%*** (22)	.250			
% high in self-consciousness	18% (39)	7% (29)	.206	10% (40)	23% (22)	.108						
% unstable self-picture				34% (41)	43% (23)	.129						
% distinctive, different from others				48% (40)	63% (24)	.143						
% dissatisfied with looks							44% (41)	26% (23)	.398			
% not showing true feelings to others	35% (40)	16% (31)	.253	20% (41)	38% (24)	.340				15% (33)	37% (30)	.278
% low estimate of popularity				8% (40)	9%** (22)	-.223				3% (32)	14% (28)	.317 p = .02

*Since we are studying a population, not a sample, tests of statistical significance are not really applicable. However, where (even with these small numbers) $p < .10$ according to a chi square test, we report that fact. A consistent direction of findings over many measures is used as a criterion for presentation. These dependent variables are all trichotemized as close to 1/3 frequency division point as possible (see Table 2). Findings are presented only when both extremes act consistently with one another.

Table 3. (continued)

**A positive gamma indicates that a favorable rating on one variable is related to a favorable rating on the other. Low depression, low self-consciousness, high satisfaction with looks, a high estimate of popularity, showing one's feelings to others, and less severe objective effects of the disease are considered favorable.

***No differences are shown at the other end of the continuum for low self-esteem.

****The opposite end shows those who've been hospitalized more believe themselves more popular (60% vs. 73%).

† "Often" means once a month or more.

Table 4

Effect on Child of His or Her Own Perceptions

Pearson's Correlations*

Child's Emotional State:	How great a problem is your disease?	When you are sick, how badly do you feel?	Does the disease make you look different?
Depressive Affect	.15 p = .10	.14	
Self-Esteem	.25 p = .01	.09	.27 p = .01
Self-Consciousness	.27 p = .01	.26 p = .02	
Stability of the Self-Picture	.13		
Sense of Being Distinctive, Different	.09		
Satisfaction with One's Looks		-.09	.23 p = .02
Showing True Feelings To Others	.34 p = .002	.12	-.11
Estimate of Popularity	.28 p = .01	.10	
Anxiety	.38 p < .001	.26	
CANONICAL CORRELATION % Common Variance	.60 36%	.37 13%	.44 20%
	.47 22%		

* A positive Pearson's correlation indicates that a favorable rating on one variable is associated with a favorable rating on the other. Low depression, high self-esteem, low self-consciousness, high stability, low feelings of being distinctive or different, high satisfaction with looks, showing one's true feelings, feeling popular, and feeling the disease has had less effect are considered favorable.

Table 4. Effect on Child of His or Her Own Perceptions

	How great a problem is your disease?				When you are sick how badly do you feel?			Does the disease make you look different		
	No problem	Little Problem	Great Problem	gamma*	not sick	very sick	gamma	No	Yes	Gamma
% high in depression	28% (25)	39% (33)	36% (11)	.142	31% (39)	43% (23)	.258			
% Low in self-esteem	18% (27)	30% (33)	64% (11)	.325	24% (41)	36% (22)	.144	20% (45)	50% (26)	.435 p=.03
% high in self-consciousness	4% (25)	21% (33)	18% (11)	.383	10% (39)	23% (22)	.455			
% lower in stability of self-image					28% (39)	46% (22)	.110			
% feeling distinctive, different from others	46% (26)	49% (33)	73% (11)	.161						
% low in satisfaction with looks					44% (41)	35% (23)	-.155	30% (46)	54% (27)	.400
% not showing true feelings	19% (27)	21% (34)	64% (11)	.458 p=.01	24% (41)	26%** (23)	.214			
% feeling least popular	0% (26)	9% (32)	18% (11)	.431	3% (39)	17% (23)	.081 P=.07			

Table 4. (continued)

*A positive gamma indicates that a favorable rating on one variable is associated with a favorable rating on the other. Low depression, high self-esteem, low self-consciousness, low preoccupation with the self, high stability, low feelings of being distinctive or different, high satisfaction with looks, showing one's true feelings, feeling popular, and feeling the disease has had less effect are considered favorable.

**Greater differences are shown at the other end of the continuum:

	Not sick	Very sick
% showing true feelings to others:	34%	17%

Table 5. Age and Sex and Relevant Socio-Emotional Variables.

	Sick Children				Normal Siblings			
	Age				Age			
	8 to 11 years	12-14	15-20	gamma	8 to 11 years	12-14	15-20	gamma
% Highly Self-Conscious	0% (17)	24% (21)	16% (31)	gamma =-.409* p = .02	14% (7)	0% (18)	32% (19)	-.154
% Low in Self-Esteem	53% (17)	33% (21)	18% (33)	gamma=.383 p = .08	83% (6)	56% (18)	16% (19)	gamma=.622 p = .05
% High in Depression	29% (17)	48% (21)	29% (31)	.026	29% (7)	47% (17)	37% (19)	.039

	Sex			Sex		
	Male	Female	gamma	Male	Female	gamma
% Least Satisfied With Looks	26% (31)	49% (41)	.318**	11% (78)	60% (15)	gamma=.722 p = .002
% Unstable Self-Image	28% (29)	40% (40)	gamma=.397 p = .03	37% (27)	64% (14)	.440
% Highly Depressed	41% (29)	30% (40)	gamma = .365 p = .08	39% (28)	40% (15)	gamma=.139

*A positive gamma indicates that as age increases, the self-image becomes more favorable.

**A positive gamma indicates that the male sex is associated with a more favorable self-image.

***Among the siblings, the girls were more likely to be low in depression: 27% of girls versus 11% of boys.

Table 6

Effect of Family Size and Residence on Aspects of the Self

Family Size

	Sick Children			Normal Siblings		
	Small Families	Large Families	Pearson's r*	Small Families	Large Families	Pearson's r
% More Depressed	Not Consistent		.003	25% (16)	48% (27)	-.25 p = .05
% Highly Self-Conscious	3% (29)	23% (40)	-.23 p = .03	6% (16)	18% (28)	-.04
% Not Showing True Feelings	23% (31)	37% (41)	-.23 p = .02	19% (16)	36% (25)	-.33 p = .02
% Low in Anxiety	42% (31)	29% (41)	-.13	38% (16)	29% (28)	-.08

Family Residence

	Sick Children			Normal Siblings		
	Rural	Urban	Pearson's r	Rural	Urban	Pearson's r
% Low in Self-Esteem	50% (20)	20% (39)	.31 p = .01	67% (12)	31% (29)	.24 p = .06
% Least Satisfied With Looks	46% (22)	35% (40)	.08	31% (13)	25%** (28)	.11
% Not Showing True Feelings	46% (22)	18% (40)	.34 p = .003	33% (12)	26%** (27)	.15
% Rating Self Popular	54% (22)	73% (37)	.15	67% (12)	73%** (26)	.14

* A positive Pearson's correlation indicates that a more favorable social-emotional attitude is associated with a larger family or with urban residence. Low depression, low self-consciousness, high self-esteem, high satisfaction with looks, and revealing one's feelings to others are considered favorable.

** Cross-tab differences in the predicted direction are greater at the other extreme of the dependent variable.

Table 6. Effect of Family Size and Residence on Aspects of the Self

Family Size

	Sick Children			Normal Siblings		
	Small Families	Large Families		Small Families	Large Families	
	1 to 3 children	4 or more children	gamma	1 to 3 children	4 or more children	gamma
% More Depressed	not consistent			25% (16)	48% (27)	-.428
% Highly Self-Conscious	3% (29)	23% (40)	gamma = -.370 p < .10	6% (16)	18% (28)	-.037
% Not Showing True Feelings	13% (31)	37% (41)	gamma = -.256	19% (16)	36% (25)	gamma = -.516 p = .06

Family Residence

	Sick Children			Normal Siblings		
	Rural	Urban	gamma	Rural	Urban	gamma
% Low in Self-Esteem	50% (20)	20% (39)	gamma = .492 p = .05	67% (12)	31% (29)	.542
% Least Satisfied With Looks	46% (22)	35% (40)	.142	31% (13)	25%** (28)	.200
% Not Showing True Feelings	46% (22)	18% (40)	gamma = .557 p = .02	33% (12)	26%** (27)	.264
% Rating Self Unpopular	9% (22)	8%** (37)	.327	17% (12)	4% (26)	.205

*A positive gamma indicates that a more favorable social-emotional attitude is associated with a larger family or with urban residence. Low depression, low self-consciousness, high self-esteem, high satisfaction with looks, and revealing one's feelings to others are considered favorable.

**The other extremes of these tables show greater differences in the predicted direction:

	Rural	Urban
% satisfied with looks	23%	36%
% showing true feelings	17%	33%
% rating self popular	54%	73%

Table 7. Interactional Effects of Family Size and Residence on Self Esteem

Sick Children

	Small Family (1 to 3 children)		Large Families (4 plus children)	
	A	B	C	D
	Rural	Urban	Rural	Urban
Self Esteem				
Low	71%	21%	40%	20%
Medium	14%	32%	40%	50%
High	14%	47%	20%	30%
	100%	100%	100%	100%
	(7)	(19)	(15)	(20)
		p=.05		gamma=.333
		gamma=.714*		

Normal Siblings

	Small Family		Large Family	
	Rural	Urban	Rural	Urban
Self Esteem				
Low	67%	25%	67%	35%
Medium	0%	25%	22%	35%
High	33%	50%	11%	29%
	100%	100%	100%	100%
	(3)	(12)	(9)	(17)
		gamma=.500		gamma=.520

*A positive gamma indicates that urban residence is associated with high self-esteem.

Table 8. Effect of Family Size and Residence on Child's Definition of Disease as a Problem

Child's Definition of Disease	Small Family		Large Family	
	Rural	Urban	Rural	Urban
Not a problem	43%	65%	40%	20%
Little problem	29%	25%	33%	80%
Great problem	29%	10%	27%	0
	100%	100%	100%	100%
	(7)	(20)	(15)	(20)
	gamma = .4253		gamma = .0204	

Table 9. Father's Education and Child's Adjustment Level

	Sick Children				Siblings			
	Less than high school graduate	High school graduate or some additional business or trade school	Some college or more	gamma*	Less than high school graduate	High school graduate or some additional business school	Some college or more	gamma
% low self-esteem	33% (18)	41% (29)	25% (16)	.102	60% (10)	45% (20)	23% (13)	.295 p=.07
% think least popular	40% (18)	40% (26)	20% (17)	.430	11% (9)	6% (18)	8% (13)	.283
% not show true feelings	50% (18)	21% (29)	12% (17)	gamma=.217 p=.02	33% (9)	32% (19)	23% (13)	.357
% high depression	28% (18)	44% (21)	35% (17)	.067	60% (10)	33% (21)	33% (12)	.182
% unstable self-image	22% (18)	41% (29)	43% (16)	-.171	44% (9)	53% (19)	39% (13)	.085

*A positive association indicates an association between a high education and a favorable self-picture.

Table 10

Relationship with Mother for Sick Children and Normal Controls

	Sick Children (N = 72)	Normal Siblings (N = 44)	Baltimore Controls (N = 621)
Would you say your mother thinks you are a - wonderful person, - a pretty nice person, - a little bit of a nice person, or - not such a nice person?			
% Saying "A wonderful person"	43%	36%	26%
To which family member are you closest?			
% selecting mother	29%	18%	---
% selecting father	7%	20%	---
Who is your mother's favorite child?			
% Self	14%	7%	---

APPENDIX

Depression Scale

High score represents high depression.

Responses marked by asterisk indicate high depression.

(110) How happy would you say you are most of the time? Would you say you are . . .

Very happy
Pretty happy
*Not very happy
*Not at all happy

(111) Would you say this: "I get a lot of fun out of life."

Yes
*No

(112) Would you say this: "Mostly, I think I am quite a happy person."

Yes
*No

(114) How happy are you today? Are you . . .

Very happy
Pretty happy
*Not very happy
*Not at all happy

(115) A kid told me: "Other kids seem happier than I." Is this . . .

*True for you
Not true for you

(120) Would you say that most of the time you are . . .

Very cheerful
*Pretty cheerful
*Not very cheerful
*Not cheerful at all

Self-Esteem Scale

Low score = low self-esteem

Categories without asterisk indicate high self-esteem.

(56) Everybody has some things about him which are good and some things about him which are bad. Are more of the things about you . . .

Good
*Bad
*Both about the same

(36) Another kid said, "I am no good." Do you ever feel like this? (IF YES, ASK): Do you feel like this a lot or a little? "I am no good?"

NO
*A lot
*A little

(60) A kid told me: "There's a lot wrong with me." Do you ever feel like this? (IF YES, ASK): Do you feel like this a lot or a little? "There's a lot wrong with me."

NO
*A lot
*A little

(57) Another kids said: "I'm not much good at anything." Do you ever feel like this? (IF YES, ASK): Do you feel like this a lot or a little? "I'm not much good at anything."

NO
*A lot
*A little

(55) Another kid said,"I think I am no good at all." Do you ever feel like this? (IF YES, ASK): Do you feel like this a lot or a little? "I think I am no good at all."

NO
*A lot
*A little

(58) How happy are you with the kind of person you are? Are you . . .

Very happy with the kind of person you are
Pretty happy
*A little happy
*Not at all happy

Self-Consciousness Scale 1

Low score represents high self-consciousness.

Responses marked by asterisk indicate high self-consciousness.

(101) Let's say some grownup or adult visitors came into class and the teacher wanted them to know who you were, so she asked you to stand up and tell them a little about yourself . . .

Would you like that
*Would you not like it
Wouldn't you care

(104) If the teacher asked you to get up in front of the class and talk a little bit about your summer, would you be . . .

*Very nervous
A little nervous
Not at all nervous

(105) If you did get up in front of the class and tell them about your summer . . .

*Would you think a lot about how all the kids were looking at you
Would you think a little bit about how all the kids were looking at you
Wouldn't you think at all about the kids looking at you

(106) If you were to wear the wrong kind of clothes to a party, would that bother you . . .

*A lot
A little
Not at all

(107) If you went to a party where you did not know most of the kids, would you wonder what they were thinking about you?

*Yes
No

(108) Do you get nervous when someone watches you work?

*Yes
No

(109) A young person told me: "When I'm with people I get nervous because I worry about how much they like me." Do you feel like this . . .

*Often
Sometimes
Never

Stability of Self Scale

High score represents high stability.

Responses marked by asterisk indicate high stability.

(62) How sure are you that you know what kind of person you really are? Are you . . .

*Very sure
*Pretty sure
Not very sure
Not at all sure

(63) How often do you feel mixed up about yourself, about what you are really like?

Often
Sometimes
*Never

(97) Do you feel like this: "I know just what I'm like. I'm really sure about it."

*Yes
No

(98) A kid told me: "Some days I like the way I am. Some days I do not like the way I am." Do your feelings change like this?

Yes
*No

(100) A kid told me: "Some days I am happy with the kind of person I am, other days I am not happy with the kind of person I am." Do your feelings change like this?

Yes
*No

(102) Do you . . . *Know for sure how nice a person you are,
Do your ideas about how nice you are change a lot

(103) A kid told me: "Some days I think I am one kind of a person, other days a different kind of person." Do your feelings change like this?

Yes
*No

Sense of Distinctiveness Score

Low score represents high sense of distinctiveness

Responses marked by asterist indicate high sense of distinctiveness.

(32) How different are you from most other kids you know?

*Very different
*Somewhat different
Not different at all

(33) How much are you the same as most other kids you know?

Very much the same
*Somewhat the same
*Not at all the same as other kids

Satisfied With Looks Score

Low score represents high satisfaction with looks.

Responses marked by asterisk indicate high satisfaction with looks.

(45) How do you feel about your looks? Are you . . .

*Very happy with the way you look
*Pretty happy with the way you look
Not very happy with the way you look
Not at all happy with the way you look

(46) Do you think you are . . .

Too fat
*Just right
Too thin

(47) Do you think you are . . .

Too tall
*Just right
Too short

Show True Feelings Score

Low score represents tendency to show true feelings.

High score represents tendency to conceal true feelings.

Responses marked by asterisk indicate tendency to conceal true feelings.

(24) Do you . . .

Usually tell people what things you really like
*Do you usually not tell people what things you really like

(45) A kid told me: "I usually show other people how I really feel." How about you? Do you . . .

Usually show people how you really feel
Sometimes show people how you really feel
*Never show people how you really feel

(1) A person who keeps his feelings to himself usually doesn't tell others what he really thinks and feels inside. How much do you keep your feelings to yourself?

*Very much
*Pretty much
Not very much

Self-Estimate Well-Liked, Popular Score

High score represents low self-estimate of popularity.

Responses marked by asterisk indicate low self-estimate of popularity.

(176) How much do BOYS like you? Do boys like you . . .

Very much
Pretty much
*Not very, not much
*Not at all

(177) How much do GIRLS like you? Do girls like you . . .

Very much
Pretty much
*Not very, not much
*Not at all

(194) Would you say that the kids in your class think of you as . . .

A wonderful person
A pretty nice person
*A little bit of a nice person
*Not such a nice person