

BEHAVIOR PROBLEMS IN NEPHROTIC SYNDROME

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ABSTRACT

Objectives: To evaluate the adaptive competences and behavioral problems in children with nephrotic syndrome, and whether their mothers also showed features of psychosocial stress.

Design: Prospective case-control study.

Setting: Pediatric Out-Patient Department.

Subjects: Seventy consecutive patients of nephrotic syndrome, between (he ages of 4 to 14 years, and their mothers .constituted cases. The control group, matched for age, sex and socioeconomic status comprised of 46 children and their mothers. The mother's description of the child's behavior, on the Child Behavior Checklist (CBCL), was obtained to assess behavioral problems and social competences. The level of anxiety in the mother was assessed using the PGI Health Questionnaire N2.

Results: Children with nephrotic syndrome showed features of depressed, hyperactive or aggressive behavior. Somatic complaints, social withdrawal and poor school performance were also observed. These problems did not interfere with compliance to treatment and only 7 patients required psychological interventions. Boys with nephrotic syndrome had more hyperactive and

Chronic physical illness leads to significant psychological stress in affected children and their families(1,2). Advances in medical care of children with chronic physical illness have lead to increasing attention to the psychological aspects. Epidemiological surveys suggest that 6-12% of children are afflicted with serious chronic physical illness(3). Some adapt quite successfully, while others may suffer from social, psychological and academic handicaps that may occasionally be more serious than the physical limitations of the underlying disease(1,3-5).

Nephrotic syndrome is a common renal disorder in children; the corticosteroid responsive form being most frequent, is characterized by remission and relapses(6). Corticosteroid therapy, especially if used repeatedly, causes side

aggressive behavior as compared to girls. The scores on the CBCL were well correlated with the anxiety scores of the mother.

Conclusions: These observations suggest the presence of minor behavior problems in a significant proportion of children with nephrotic syndrome. The severity of these problems may be related to the attitude of the mother towards the child's illness.

Keywords: Chronic physical illness, Nephrotic syndrome, Behavior problems

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effects, the most visible being cushingoid, obesity and hirsutism. Most patients achieve permanent remission by the third decade of life. In the less common type of nephrotic syndrome, which does not respond to corticosteroids, life-long treatment with anti-hypertensive drugs and diuretics may be needed and dietary modifications are often necessary. Parental overconcern often interrupts schooling and day-to-day activities. Children with nephrotic syndrome are thus exposed to psychological hazards in addition to complications of chronic physical illness, which may interfere with their optimal management. The consequences of the illness may also affect other members of the family(7).

Very little information is available on behavioral problems in children with nephrotic syndrome. We studied the pattern of such problems and whether the mothers of these children also have features of psychosocial stress.

Subjects and Methods

Seventy consecutive children, between the ages of 4 to 14 years, with nephrotic syndrome attending the Pediatric Nephrology Clinic of the All India Institute of Medical Sciences, New Delhi and their mothers were studied. Children with illness of more than 6 months duration were included. Those having a condition known to be associated with behavioral changes including infections of the central nervous system, vasculitis, elevated blood levels of urea, hypertension or steroid encephalopathy were excluded. The control group comprised of 46 children and their mothers attending the Pediatric Out-Patients Clinic for

minor illnesses, mostly acute diarrhea, upper respiratory infections and poor appetite. The socio-economic status was assessed using the Kuppaswamy scale(8).

Child Behavior Checklist (CBCL)(9), a well-standardized measure of behavior problems and social competencies was used. The mother's description of the child's behavior was obtained on a standardized format. The CBCL contains 118 behavior problems items, which were scored as not being present (score-0), occasionally present (score-1), and very often present (score-2). Based on the response to these items, the CBCL identifies 9 behavior problem scales. These include scales related to schizoid, depressed, uncommunicative, obsessive compulsive, hyperactive, aggressive, and delinquent behavior, somatic complaints and social withdrawal. The CBCL also contains 20 items of social competence assessing involvement and attainment in social activities, social participation and school performance. Responses for items of social competence were also scored from 0 to 2.

The total raw scores for each of the scales of behavior problems and social competencies were obtained by adding the scores of all the individual items of that scale. These scores were then converted to normalized '1' scores to enable comparison between patients and controls. A 'T' score of more than 70 on any of the behavior problem scales was considered to indicate a behavioral disorder.

The level of anxiety in the mothers was assessed using the Hindi version of the PGI Health Questionnaire N2(10).

The scale consists of 60 items, 50 measuring neurotic behavior and 10 measuring the tendency to lie. The responses were recorded as being present or absent. This questionnaire is a measure of emotionality and propensity to develop neurosis. A score of 9 or above indicates the presence of neurotic behavior.

The questionnaires were administered by a clinical psychologist in a separate room in the Pediatric Out-Patient Clinic. Approximately 30-35 minutes were required to administer the questionnaires in each case. Statistical analysis was done using the Students "t" test. Correlation between the scores on the CBCL and the anxiety score of the mother were done using the method of "product moment correlation".

Results

Of 70 patients with nephrotic syn-

drome, 52 were boys; the mean age at evaluation was 7.2 ± 3.2 yr. These patients were either the only or the first born child in 29 families (41.4%). Majority of the patients were from the upper (11.4%) or upper middle (70%) socioeconomic class. The mean age at evaluation of the controls was 6.5 ± 3.2 yr. The patients and controls were comparable for age, sex distribution, years of schooling, birth order and socioeconomic status. The duration of illness in patients with nephrotic syndrome varied between 6 months to 7 years, being 2 years or less in 50% patients.

The results of the CBCL are shown in (Table I). The social competence scales (social activities, social participation and school performance) showed lower scores for children with nephrotic syndrome than the controls. Behavior prob-

TABLE I— 'T' Scores of Social Competence and Behavior Problems

Items	Nephrotic syndrome (n=70)		Controls (n=46)		'p' value
	Mean	SD	Mean	SD	
Social Competence					
Social activities	49.7	5.2	51.6	3.2	>0.05
Social participation	44.9	7.1	56.4	5.3	>0.05
School performance	31.5	8.4	57.6	3.1	<0.05
Behavior Problems					
Depressed	38.6	10.7	8.4	2.1	<0.001
Somatic complaints	68.5	9.4	24.5	4.0	<0.001
Social withdrawal	54.3	7.5	22.2	4.2	<0.001
Hyperactive	62.1	10.1	21.6	5.1	<0.001
Aggressive	68.7	11.2	23.1	4.7	<0.001
Total Score	62.2	9.5	21.9	4.2	<0.001

blems related to depressed, hyperactive or aggressive behavior, somatic complaints (bodyaches, pain) and social withdrawal were more frequent amongst children with nephrotic syndrome. The mean T scores of these behavior problems were significantly higher in the patients as compared to controls. Seven patients (10%) having a T score of more than 70, required psychological intervention.

None of the patients with nephrotic syndrome showed features of schizoid, obsessive compulsive, uncommunicative and delinquent behavior. The total mean T score of the behavior problems in patients with nephrotic syndrome (62.2 ± 9.5) was significantly increased as compared to controls (21.9 ± 4.2) ($p < 0.001$). Boys with nephrotic syndrome scored higher on hyperactive and aggressive behavior scales as compared to girls (Fig. 1). The age and birth order of the

patient and socioeconomic status of the family were not related to the presence of behavioral problems.

The neuroticism scores in mothers of children with nephrotic syndrome were more than 9 in 46 (65.7%) as compared to 14 (30.4%) mothers in the control group. A significant correlation ($r=0.334$; $p < 0.05$) was found between the severity of the behavioral problems in children and the neuroticism scores of the mothers.

Discussion

Chronic physical illness has a major psychological impact on the development of the child. A significant proportion of these children are handicapped by social and psychologic maladjustment. In a study from United Kingdom(1), 17% of children, between 9 and 11 years of age, with a chronic systemic illness showed behavioral and

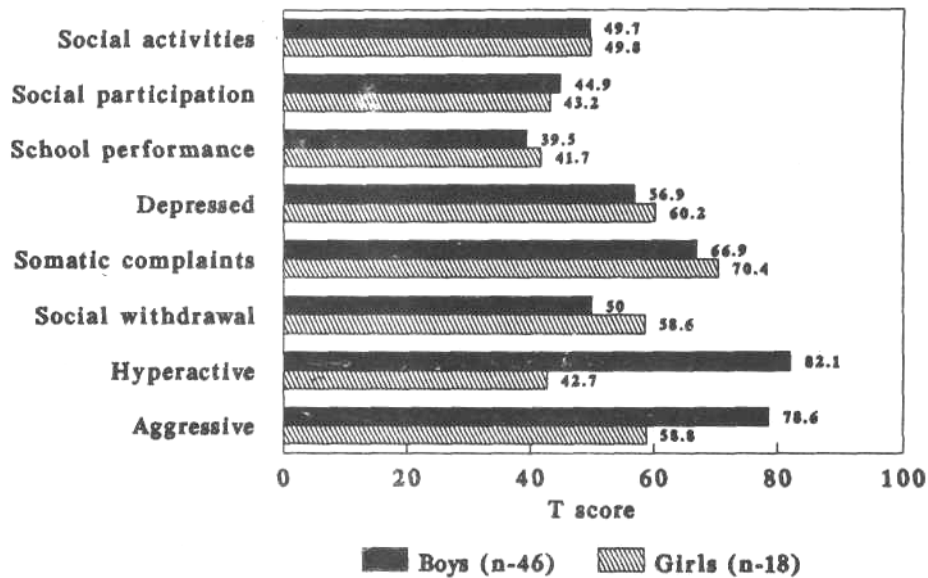


Fig. 1. Social competence and behavior problems in boys and girls with nephrotic syndrome.

psychologic maladjustment as compared to 7% of the healthy matched controls. These patients also showed a lower level of educational achievement as compared to normal children. Similar results were reported in studies involving a large number of children with chronic physical disorders(3-5,11). The presence of behavioral problems is often related to the severity and duration of the disease(3,5,12).

We found that the incidence of significant behavioral disorders was 10% in patients with nephrotic syndrome. The level of school performances was lower in these patients. While the behavioral disorders did not interfere with compliance of medication, they did affect the development of personality. Patients with chronic illnesses may show difficulty in adjustment, poor self esteem and low confidence(3,4,13).

Parents of children with nephrotic syndrome often feel guilty over the dietary restrictions, and other discomforts that the child may have. The presence of grandparents, in a significant proportion of families in India, further leads to overprotection and overindulgence. Steroid therapy often leads to ungainly obesity and hirsutism making the patient self-conscious and withdrawn. Frequent visits to the hospital for consultations and admissions limit the time and opportunities for socialization with healthy peers. The social interaction of these children, is further restricted by parents, despite advice to the contrary, because of a presumed risk of developing infections. These factors significantly influence the appropriate development of a body image and self confidence and contribute to social isolation(13). Age-

appropriate learning may also be hindered if schooling is interrupted due to poor disease control.

Our findings show that two-thirds of the mother of patients with nephrotic syndrome suffered from a high level of anxiety. There was strong correlation between the severity of behavioral problems and the neuroticism of the mothers. These findings confirm the important role played by the family, in particular the mothers, in determining the behavioral adjustments in a patient with nephrotic syndrome. Similar results have been previously reported in children with their chronic illnesses(11). A previous case-control study on the effect of nephrotic syndrome on the family showed that the *siblings* of these patients may occasionally show psychosocial problems, especially decreased self-confidence, depressed behavior and poor academic performance(7).

Our results suggest that patients with nephrotic syndrome commonly show minor behavior problems including those related to depressed, hyperactive or aggressive behavior and poor school performance. The presence of major problems, requiring intervention was, however, low. Exaggerated feeling of anxiety in the mothers may determine the severity of these behavioral problems. Physicians caring for children with nephrotic syndrome need to be aware of these problems and help minimize disability, unnecessary anxiety and psychological stress. A close interaction with the family and appropriate counselling should be a part of the management.

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