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A DESCRIPTIVE STUDY OF CHILDREN ADMITTED TO

THE CHILDREN'S SEASHORE HOUSE WITH A

DIAGNOSIS OF LEGG-CALVE-PERTHES

DISEASE, 1966-1967

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DEDICATION

For his patience and advice, and for his emotional and financial support, I wish to dedicate this thesis to my husband, Wei-hsein.

T. T. Y.
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CHAPTER I

INTRODUCTION

Significance of the Study

Legg-Calve-Perthes disease is a disease about which most persons are little aware, if they are aware of it at all. But of the some 40 diseases for which patients have been treated over the past decade at the Children's Seashore House in Atlantic City, New Jersey, Legg-Calve-Perthes disease numbers first, if not second, among them.

From April, 1964, to March 31, 1965, there were eight patients admitted with diagnoses of Legg-Calve-Perthes, or, as it is commonly referred to, LCPS. The eight cases represented 14 percent of the total admissions for that period. Eleven cases, or 13 percent, of the total admissions entered the Children's Seashore House between April 1, 1965, and March 31, 1966. An additional 33 children suffering from the disease were admitted between January, 1966, and November, 1967.

The exact number of children suffering from Legg-Calve-Perthes disease in the United States is unknown, because of the general lack of accurate statistics regarding the disease and its victims. Several experts on the disease, however, have attempted estimates of the inci-
dence of the disease in this country. One of them is Dr. Charles W. Goff, who estimated that one child in 20,000 is afflicted. By extrapolating this estimate to the total population, Goff calculated the number of Legg-Calve-Perthes cases in 1950 as 20,000.¹

This study on Legg-Calve-Perthes disease was initiated by the writer when she observed more Legg-Calve-Perthes patients than any other type of diseased patients in the hospital during her first few weeks of work at the Children's Seashore House in Atlantic City, New Jersey. Shortly thereafter, the writer obtained her first findings of the study, namely, that the frequency of Legg-Calve-Perthes disease numbered first, if not second, among the some 40 diseases for which patients had been treated over the past decade at the Children's Seashore House.

Why has Legg-Calve-Perthes disease been the most frequently encountered disease at the Children's Seashore House? Why have there been more white than Negro patients? Does race enter the field of causalities? Who are the children suffering from this disease? And who are their parents? What about their physical and social backgrounds? An attempt to answer these questions is made by the writer through this study. Moreover, the writer believes these are the questions of those who are working with and who are concerned with

LCPS patients, including not only physicians and parents, but also social workers.

**Purpose of the Study**

The purpose for undertaking this study was to describe the social and physical characteristics of youngsters with the affliction known as Legg-Calve-Perthes disease. More specifically, the purpose was to complete a descriptive study of a small sample of such youngsters, namely those for whom treatment was provided during a period of approximately two years at Children's Seashore House in Atlantic City, New Jersey.

The social and physical factors described represent a small number of selected factors that the investigator wished to examine. Among the variables studied were social class, family income, religious affiliation, ethnicity, age, father's occupation, area of residence, source of referral, duration of hospital stay, and physical condition at the time of discharge from the hospital. The variables cited are discussed in a subsequent chapter with reference to all of the children included in this study. These analyses are, in turn, complemented by the intensive treatment of three specially selected cases in which the child's medical and family histories are described in detail for illustrative purposes.

**Review of the Literature**

Ever since Arthur T. Legg, a Boston orthopedist, reported his
findings to the American Orthopaedic Association in the summer of 1909 at Hartford, Legg-Calve-Perthes disease has been defined and the symptoms of it as characterized by Legg are limping, slight limitation of motion, and the uniform radiographic changes in the end of the femur.¹

The research studies on Legg-Calve-Perthes disease have been mainly related to its treatment, methods and end results during the past seventy years. This is because the opinions on the methods and duration of treatment are remarkably different in spite of the fact that most orthopedists agree that pressure on the head of the femur is harmful and that weight bearing is to be avoided at least during the progressive phase of the disease. Since treatment, methods and end results are not the main interest of this study, any extensive review of the literature on this area was eliminated. Nevertheless, some important findings relating to the study of Legg-Calve-Perthes disease are presented.

A review of long-term end results in 90 patients who had Legg-Calve-Perthes disease at the Crippled Children's Hospital was completed by Douglas O. Powell, M.D., and Earnest B. Carpenter, M.D., and published in 1960. The 90 patients included 76 boys and 14 girls, a 5:1 ratio of males to females. The average age of patients of this study was 7 years and 10 months. The important findings of this

¹Ibid.
study are: first, patients over the age of 8 years had poor end results, regardless of the type of treatment; and, secondly, patients aged 5 years or younger with an early diagnosis had excellent treatment results.¹

During the decade of 1948 to 1958, 54 patients with Legg-Calve-Perthes disease were admitted to the Hospital for special surgery. There were 46 boys and 8 girls, ranging in age from 2 to 12 years. The chief symptom, common to all patients, was a limp. Forty-eight patients complained of pain and 21 had restricted hip motion.²

Legg-Calve-Perthes disease with special regard to the prognosis and treatment has been investigated by Dr. Halfdan Sundt. The author's material comprises 153 cases, of which 19 were bilateral, thus making altogether 172 hips. Of these 153 cases, 137 were reinvestigated after a period of more than 10 years from the beginning of the illness. The author's investigations show that the younger the patient is, the more favorable is the prognosis, whether the patient has been treated or not.³

¹Earnest B. Carpenter and Douglas O. Powell, "Osteochondrosis of Capital Epiphysis of Femur (Legg-Calve-Perthes Disease), Long-term End-results in Ninety Patients," Journal of the American Medical Association, CLXXII (February 6, 1960), 525.


An evaluation of treatment by a tractional Ischial weight bearing brace on Legg-Calvé-Perthes disease has been done by Charles H. Herndon, M.D., and Clarence H. Heyman, M.D. Their paper reports on a study of 41 hips with Legg-Calvé-Perthes uniformly treated by traction and a non-weight bearing brace. The cases were selected from the Crippled Children’s Service of the Ohio Department of Public Welfare. Average duration of the disease was 3.5 years. The average length of hospitalization with traction was 6.3 months. The patients’ ages at the onset of the disease ranged from 3 to 7 years. The average age was 6.5 years. Characteristically, there was a history of limp and pain at the knee before being seen by the doctors. The patients were usually boys and their most frequent ages were between 4 and 6.1

A detailed research study on Legg-Calvé-Perthes disease was done by Charles W. Goff, M.D. All the children who had been under treatment for Legg-Calvé-Perthes disease during the past 15 years at Newington Home and Hospital for Crippled Children, together with those from the author’s private sources and clinics, were reviewed by him in 1954.2

This research comprised 103 cases of Legg-Calvé-Perthes disease. The cases included 86 males and 17 females. The right hip

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2 Goff, op. cit., p. 63.
alone was involved in 44 cases, the left in 41 cases and both hips in 18 cases.

The onset age varied from 2.5 to 12.8 years. In this regard the modal age was 6 for both males and females. There were few females over age 6, with none over age 10. There were more males over age 6, with the oldest age 12.

Within the white European and the classic Mongoloid stocks, there existed evidence of Legg-Calve-Perthes disease, occurring at about the same rate in each, that is, 15 to 17 percent of hip disorders. The sources which the author obtained were mainly from the hospitals. For instance, the Charity Hospital of Louisiana, New Orleans, from July 1, 1941, to June 30, 1951, admitted 110,555 Negroes and 45,678 white children under 12 years of age. As far as investigators could determine, with the record system in use, not one case of Legg-Calve-Perthes disease was observed in Negro children.

In the white stock the disturbance may be a recessive Mendelian trait complex, with varying degrees of penetrance, not sex-linked nor sex-influences, yet showing definite linkage, as manifested by similarity in sex preponderance, body build, age of incidence and bilaterality, as well as other complex traits. They were exemplified by growth retardations of a kind, together with a definite constitutional susceptibility of the hip joint per se; Legg-Calve-Perthes is constitutional biological stigma leading to inferior fitness.
Heredity plays a part in at least 20 percent of those affected.\(^1\)

A study of 68 children with Legg-Calve-Perthes disease was done by Mrs. Myerma Reid Hersey, at Newington, Connecticut. The purpose of her study was to evaluate the many facets of the adjustment problem of these individuals.

The study indicated that the social development of children with Legg-Calve-Perthes disease had no relation to housing or home environment. The ages of the parents were tabulated but not found to be significant. Pregnancy histories were obtained, but were so emotionally loaded as to be of little objective value. Marital situations seemed to represent well-balanced home conditions in most instances; there were broken homes as well as intact families. The religious faiths of the parents and of the children were irrelevant. There was only one Hebrew. There were twice as many Catholics as Protestants. This factor is significant only in relation to the population of the State of Connecticut, which is reported to be about equally divided between the latter two groups. The occupation of the parents is of importance in the sample. Parents with varied occupations had various degrees of educational accomplishments, ranging from grammar school dropouts to college graduates. So far as the children were concerned, none of the 30 children seems to have developed normally as infants; homesickness, regression, and many were advanced in

\(^1\text{Goff, op. cit., p. 59-80, 278-85.}\)
development, namely sitting up early, walking early, etc. The chief difficulty of many of these children apparently was enuresis. The majority of these children were of average intelligence, 10 of superior intelligence, 4 of low age range intelligence, and only 1 with an I.Q. of 50. Fifty-one children led active lives, engaging in sports, and not refraining from any of the usual daily living activities.¹

Summary

Legg-Calvé-Perthes disease is one that afflicts children at a 5:1 ratio of males to females. The onset ages vary from 2 to 14 years. Dr. Halfdan Sundt’s investigation shows that the younger the patient is, the more favorable is the prognosis for recovery. Dr. Earnest Carpenter’s study explores the theory that a LCPS child less than 8 years old develops the condition, his chances for good repair are better than a child over 8 years old.

Most cases of Legg-Calvé-Perthes disease involve only one hip, sometimes bilateral. The chief symptoms of the disease are a limp, pain in the hip, thigh or knee, and restricted hip motion. According to Goff’s study, more than one case in a family is unusual. There are families which have had a high incidence of Legg-Calvé-Perthes disease in three or four recorded generations. Perhaps an

¹Ibid., pp. 256-65.
inherited body build and body chemistry, or a recessive gene or mutation was responsible. An heredity factor which predisposes to Legg-Calve-Perthes disease is a definite possibility. Perhaps the frequency of Legg-Calve-Perthes disease is about one child in 20,000, as Dr. Goff says, but it does not seem to occur in pure-blooded Negroes, Polynesians, or American Indians.

Social aspects indicate the desirability of proper preparation of the child and parents, relative to the long term recumbency care, with all its implications. The majority of children with Legg-Calve-Perthes disease possess healthy, well rounded, vigorous, active personalities.

Method of Procedure

All the Legg-Calve-Perthes disease children studied were hospitalized at the Children's Seashore House, Atlantic City, New Jersey. The institution is a convalescent and rehabilitation hospital for the care of children with chronic illnesses under the age of 18 years, regardless of race, color, place of residence.¹

The cases for this study were collected from the Social Service files of the hospital. Case records for the patients consisted of pre-admission interviews with parents, and social information which came from referral sources.

¹See Appendix I.
Scope and Limitations

This study was limited to the patients who were admitted to the Children's Seashore House, Atlantic City, New Jersey. The time was limited from January, 1966, to November, 1967. All the Legg-Calve-Perthes disease patients who were hospitalized by the end of November, 1967, were included in the study, whereas the admission day of the Legg-Calve-Perthes patients was not limited, ranging from October, 1965, to September, 1967.
CHAPTER II

WHAT IS LEGG-CALVE-PERTHES DISEASE?

Legg-Calve-Perthes disease is sometimes referred to as Legg-Perthes, Perthes, or LCPS for short. The medical terminology for the disease is "aseptic avascular necrosis of the capital epiphysis of the femur." Translated into the language of the layman, this means no germs are present, but the knob (capital epiphysis) in the hip has partly dissolved. Perthes is one of many disorders, termed osteochondroses, affecting the victim's joints. Two additional medical names for Perthes are "coxa plana and osteochondritis deformans coxae juvenilis."¹

Legg, Calve and Perthes are the names of physicians who classified the disorder.² The disease, a disorder of the hip, occurs in children during the period of the most rapid bone growth, that is, 2 to 14 years. It is localized in the head of the femur (thigh bone) and is related to a decreased blood supply of unknown causes, resulting in varying degrees of deformity. Impaired hip movement, muscle spasm, limping, moderate pain, and sometimes a shortening of the

¹V. W. Rosar, Perthes and Parents (Springfield: Charles C. Thomas Company, 1963), p. 3
²Goff, op. cit., p. 3
involved leg may develop in proportion to the degree of deformation in the normal spherical head of the femur.

The cause of Legg-Perthes disease has not been fully determined. Most evidence points to injury as causative in certain cases while in others, to a congenital defect in the epiphysis, or growth center, of the femoral head. Infectious, hormonal, and nutritional factors are not believed to play a significant role.

The present therapy of the disease emphasizes immobilization—the methods and extent of which vary, ranging from a relatively short period of bed rest to an enforced recumbency of periods up to four years. A variety of devices such as metal frames, splints, plaster casts, braces, and crutches are used to eliminate weight bearing and to enable supported walking. Physical therapy for all extremities, including underwater exercises, have been advocated by some physicians. Current opinion is that treatment must vary according to the individual patient, but prevention of weight bearing on the affected hip is usually a major part of therapy.

At the Children's Seashore House, LCPS children are treated according to their stages. Its purpose is to facilitate and improve nursing care so that children can be recognized as belonging to one or another stage of management. There are four stages of LCPS treatment. Children in stage one are on complete bed rest in traction, and no weight bearing is permitted on the affected hip; children in
stage two and three have restricted motion and are allowed to sit in wheelchairs; children in stage four are allowed to have full weight bearing.
CHAPTER III

PRESENTATION OF FINDINGS: THE CHARACTERISTICS OF LCPS CHILDREN AT THE CHILDREN'S SEASHORE HOUSE

This chapter presents the findings of the study in terms of the characteristics of LCPS children at the Children's Seashore House from 1966 to 1967. The findings are analyzed as to: (1) age and sex; (2) race; (3) religion; (4) father's occupation and family income; (5) family status; (6) average length of hospital stay; (7) patient's residence; (8) patient's referral source; and (9) end result.

Age and Sex

Table 1 shows that of the 33 LCPS patients, 28 were boys and 5 were girls. This is a 5.6 : 1 ratio of males to females. As shown in the table, 19 of the boys studied were between the ages of 5 and 8. Six were between 9 and 12, and 3 between 3 and 4. The writer does not consider the age distribution of the females to be significant, as so few female patients were included in the study sample.

Race

Of the total population, 31 patients studied were white and 2 were Negro. None were Mongoloid. It is significant that the white LCPS patients outnumbered those of Negroes. But no significance is attached to the lack of Mongoloids in the population studied. It should be mentioned that Children's Seashore House has only rarely
### TABLE 1

**DISTRIBUTION OF POPULATION BY AGE AND BY SEX**

<table>
<thead>
<tr>
<th>Age</th>
<th>Number of Boys</th>
<th>Number of Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-4</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>5-6</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>7-8</td>
<td>11</td>
<td>-</td>
</tr>
<tr>
<td>9-10</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>11-12</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>28</td>
<td>5</td>
</tr>
</tbody>
</table>

admitted Mongoloid patients.

**Religion**

Of the total population, 22 of the children were Catholics, 7 were Protestants, 1 was Jewish and 1 had no religious affiliation. For 2 patients, no information was available.

There appears to be no significant relationship between the religious affiliation, on the one hand, and those children hospitalized with LCPS, on the other. However, Catholics did outnumber the Protestants. But this probably simply reflects the distribution of religious faiths in the population areas served by the Children's Seashore House. Evidently this cannot be proved unless further study on the distribution of the religion in the areas around the Children's
Seashore House is undertaken.

Father's Occupation and Family Income

There appears to be a variety of occupations for fathers. They were professional, skilled, semiskilled, and unskilled. There was a pressman surveyor, an electronics technician, and a cafeteria owner. Also included in this group were a pipefitter, a milkman, and a street-cleaner.

In reviewing the family income for the patients studied, it becomes evident that the majority of the families have an annual family income between $3,000 and $10,000. However, 19 of the 33 families had an income between $5,000 and $7,000. Seven of the 33 families had a yearly income between $3,000 and $5,000. Six families had yearly incomes between $7,000 and $10,000. One family was on public assistance, with the major source of financial support provided by Aid to Dependent Children.

Family Status

The majority of families studied were classified as "intact" family units. Thirty of the 33 families were intact, and 2 of the 33 families were from broken homes. By broken homes the writer means either a child living with one parent or a child living with an unmarried mother. One patient studied lived in a foster home.
Average Length of Hospital Stay

The average length of the hospital stay for all patients studied was 360.75 days. The duration of hospital stay for one case was unknown, and 6 cases remained hospitalized at the time the data were collected.

Patient's Residence

Approximately 50 percent of the patients studied resided in the State of Pennsylvania. Of the 33 patients, 15 were from Philadelphia and 10 resided in Pennsylvania but outside of Philadelphia. Seven of the 33 patients studied were from the State of New Jersey. None were from Delaware, and only one from a state other than New Jersey or Pennsylvania.

Patient's Referral Source

Two thirds of the patients studied were referred by Pennsylvania physicians or institutions. The remaining admission referrals were mostly from New Jersey and Delaware physicians and institutions.

Of the 33 patients studied, 5 were referred from Children's Hospital of Philadelphia, 6 from Hospital of the University of Pennsylvania, and 7 from other Pennsylvania physicians and institutions. New Jersey physicians and institutions referred 6 patients, Delaware physicians and institutions referred 2, and from other sources there was only 1 referral. The referral source for 2 cases was unknown.
End Result

Twelve of the 33 patients studied had "good" end results; they were discharged on the condition of being healed or almost healed. Seven of the 33 were in Stage II of the disease when discharged. Four children hospitalized at the Children's Seashore House at the time when the study was made also were in State II. Two of those still hospitalized were in Stage I. For 12 of the patients studied, records indicating end results were not available.

In reviewing the patients regarding the stage of the disease when admitted, there was one common symptom appearing among all of the patients who had good end results. This common symptom was that they were in an early stage of the disease. Of the patients studied, 5 of the 12 patients were in Stage I and 7 were in Stage II.

The record of the reason for discharge was found in 11 cases, 9 were healed or almost healed, and 3 were removed by families against medical advice, which explains why one patient studied was in Stage I when discharged from the hospital.
CHAPTER IV

THREE CASE HISTORIES OF LCPS CHILDREN AT CHILDREN’S SEASHORE HOUSE

John Smith Case

Name: John Smith
Sex: Male
Race: White
Age: Eight
Admission Date: June 13, 1967
Discharge Date:
Religion: Catholic
History of Illness:

In October of 1966 John hurt himself while playing football and limped for a week. His mother began to worry because the limp did not disappear, so she took John to be x-rayed at Sacred Heart Hospital. There, John's problem was diagnosed as a torn ligament, and it was recommended that he stay off his feet as much as possible. John did not complain of any pain at that time. Since the limp continued to be present, x-rays were taken over a period of months and in January, 1967, Legg-Calve-Perthes disease was diagnosed. John was given crutches but it is believed that he did not follow the instructions not to put
weight on his left leg.

John was referred from Sacred Heart Hospital to Children's Seashore House on June 13, 1967. He was treated with complete bed-rest for his first month of hospitalization at the Children's Seashore House. From July, 1967, through October, 1967, John was moved from Stage I to Stage II, and he was treated with bed-rest without traction and with physical therapy. John was eventually put on a cart with two wheels by which he was able to move about for such activities as school or recreation. In October, 1967, John was back to Stage I for a period of two weeks, as his x-ray film showed no improvement and he also had limitation of internal rotation on his hip. John was in Stage II until January 10, 1968. From January 10, 1968, to the present, John was in Stage III. He used a wheelchair to eliminate weight-bearing, and he had physical therapy for all extremities, including underwater exercises.

Family History

John came from a Catholic family, consisting of parents and five siblings. John is the second order of the six children whose ages ranged from three months to fourteen years.

Mr. Smith worked as a surveyor with a yearly income between $5,000 and $7,000. Mrs. Smith is unemployed and her time is mostly occupied by caring for children and by housekeeping.

The parents seemed to understand John's disease quite well. They had accepted it as necessary that their son, John, might need to
be hospitalized in the Children's Seashore House from two to three years. John is a nice-looking, self-confident and athletic boy with various interests. He is sensitive and quite concerned about his illness, and he would be depressed if his condition had not been improving. John's teacher at Children's Seashore House said, "John sometimes becomes depressed about his illness and those feelings are evident in his classroom performance." Nevertheless, John seemed to gain some emotional support from his LCPs friends and from the medical staff. John's parents shared a great deal of feelings with him; they had visited John every weekend after he was admitted to Children's Seashore House.

The family resided in Collegeville, Pennsylvania, and lived in a one-and-half story Cape Cod house.

Gloria Johnson Case

Name: Gloria Johnson
Sex: Female
Race: Negro
Age: Twelve
Admission Date: August 30, 1966
Discharge Date: July 7, 1967
Religion: Protestant
History of Illness:

Gloria has had sickle cell anemia since she was three years of age,
and she was hospitalized several times because of it. In April of 1966, Gloria began having pain in her hip and her mother took her to Children's Hospital of Philadelphia. She was seen there as an outpatient. Two months later she began to limp and had difficulty in walking. X-rays were taken and they indicated Legg-Calve-Perthes disease. On August 5, 1966, Gloria was admitted to Children's Hospital of Philadelphia with a diagnosis of Legg-Calve-Perthes disease, secondary to sickle cell anemia. On August 30, 1966, Gloria was referred to the Children's Seashore House for complete bed-rest treatment until her caliper ischial weightbearing brace was ready. Gloria had been in Stage I for five months before she was moved to Stage II. In January, 1967, Gloria secured her brace, and was then discharged to her home. She continued to be an out-patient at Children's Hospital of Philadelphia.

Family History

The family comprised the parents and four children ranging in age from nine to nineteen years. Mr. Johnson worked for the City of Philadelphia as a street cleaner and earned $130 per two weeks. Mrs. Johnson was in a training program to be a power sewing machine operator.

Gloria was a quiet, shy girl but she was fairly active when she was at home. Gloria got along well in school, making A's and B's. She impressed the social worker as having good spirits for a bed patient.

The family resided in Philadelphia, and lived in a three-story
house with five bedrooms.

David Miller Case

Name: David Miller
Sex: Male
Race: White
Age: Six

Admission Date: January 7, 1966
Discharge Date: June 16, 1967
Religion: Catholic

History of Illness:

The parents noticed David was limping around Thanksgiving of 1964. No doctor was consulted at that time. Not long thereafter, the parents noticed that David's leg was swelling but they were not too concerned about it. After Christmas, David became quieter although he did not complain of pain. One day when the mother was walking David to the candy store, she noticed that had a great deal of difficulty walking after he fell. Their family doctor was ill and not available. They consulted with a pediatrician. He ordered x-rays for David. There was a delay in getting the x-rays since David had a cold. However, following the x-rays, sometime in January, the diagnosis of Legg-Calve-Perthes disease was made. David was hospitalized in Germantown Hospital in Pennsylvania for eight days. He was in traction and then placed in a body cast. David was discharged to his home soon, and he remained home until January 7, 1966, which was the date he was admitted to the
Children's Seashore House.

David had been in Stage I for six months, in Stage II for about two months, and then in Stage III for about one month. On October 3, 1966, David was moved from Stage III to Stage IV. A week later, he was back to Stage II as a result of reevaluations of his x-ray films and he used a wheelchair to eliminate weight-bearing. Then David was in Stage III for four months, as his condition was rapidly improving. On May 9, 1967, David was moved to Stage IV, and he was close to being healed. He was discharged home thirty-seven days later.

Family History

David came from a big Catholic family consisting of parents and eight siblings whose ages ranged from seven to twenty-two years. Two of the sisters were married and lived away from the family. One sister was deceased.

David's father worked as a laboratory technician with Gulf Oil Company earning $7,680 yearly. The mother was unemployed and was busy with caring for her children most of the time.

David was another active Legg-Calve-Perthes patient. The parents felt that the most difficult thing for David had been the restrictions on his physical activities. While he was on complete bed rest, he broke the cast three times sliding down the steps.

The family resided in Philadelphia, and came to Children's Seashore House to visit David on weekends.
CHAPTER V

SUMMARY, FINDINGS AND CONCLUSIONS

This study describes and examines some selected physical and social characteristics of children afflicted with Legg-Calvé-Perthes disease. The sample studied comprised 33 children who had been admitted to the Children's Seashore House in Atlantic City, New Jersey, for treatment of the disease. These admissions occurred between January 1, 1966, and November 31, 1967.

In reviewing the literature it was noted that past studies had focused on children with the disease who ranged in age from 2 to 14 years. The youngsters included in this study were of similar ages, ranging from 3 to 12 years. On the basis of past studies and the present one, it would appear to be an obvious conclusion that Legg-Calvé-Perthes disease strikes during childhood and, seemingly, is associated with that period of life during which bone growth is most rapid.

The sex ratio characterizing the sample studied was approximately the same as that reported in studies included in the survey of the literature. In this study the ratio was 5.6 males for each female; in the studies reviewed the ratio was 5 to 1.

According to Dr. Charles W. Goff, LCPS is mostly confined to
white and classic Mongoloid stocks, and only rarely occurs among Negroes. A racial imbalance was observed in this study also. Of the 33 patients, 31 were white and only 2 were Negro.

According to the report of Dr. Charles H. Herndon and Dr. Clarence H. Heyman on a study of Legg-Perthes disease, the average duration of the disease was 3.5 years, whereas the average length of the hospital stay of the 33 patients in this study was 360.75 days. The longest duration of hospital stay for those patients who were healed or almost healed when discharged was 878 days, and the shortest was 189 days. It is necessary to note that a direct comparison between the above two studies cannot be made. This is because not all of the 33 LCPS patients studied had completed their treatment when the data for this study were collected. Nevertheless, it is safe to say that LCPS disease usually needs long-term recumbency care and that it takes approximately one to four years to be cured.

The study showed that the incidence of LCPS disease crosses all economic levels, but the majority of the patients' families had a yearly income of between $3,000 and $10,000.

The families of LCPS patients included in this study were characterized by considerable stability. The majority of families studied were "intact." Only 2 of the 33 families involved were "broken homes."

The geographical areas from which LCPS patients were provided treatment by the Children's Seashore House during 1966 and 1967
were limited mostly to the states of Pennsylvania and New Jersey. Most of the 33 patients studied resided in these 2 states—25 in Pennsylvania and 7 in New Jersey.

Two thirds of the patients studied were referred by Pennsylvania physicians and institutions. Both the Hospital of the University of Pennsylvania and the Children's Hospital of Philadelphia referred a total of 11 LCPS patients to the Children's Seashore House, which is affiliated with the above 2 hospitals.

The writer sought to study the behavioral aspects of LCPS patients in relation to their physical and social characteristics. This, however, was precluded by the limited period of time available for the study. The writer hopes that this study will interest some of its readers and, perhaps, motivate them to undertake studies of this particular facet of the problem.
APPENDIX I

INTRODUCTION TO CHILDREN’S SEASHORE HOUSE

The Children's Seashore House of Atlantic City was established in 1874. It is a one hundred bed, nonsectarian, nonprofit convalescent and rehabilitation hospital for the care of children with chronic illness.

Each child is provided an individually prescribed program of medical care, physical and occupational therapy, psychological testing, social services, regular school and recreation within realistic limits.

Located along the ocean front, the hospital's modern facilities provide in-patient and out-patient services for children from all over the country.

The Children's Seashore House is associated with the Children's Hospital of Philadelphia and the Hospital of the University of Pennsylvania. It is a member of the American Hospital Association and the New Jersey Hospital Association.

From April 1, 1965, to March 31, 1966, there were 232 children being cared for at the Children's Seashore House. Sixty-four percent of the children admitted resided in Pennsylvania and 32 percent resided in New Jersey. The Children's Hospital of Philadelphia was the major
patient referral institution. From April 1, 1965, to March 31, 1966, it referred 65 percent of all admissions.

Children admitted for an intensive rehabilitation program made up 65 percent of all admissions. Typical of this group were children with asthma, rheumatoid arthritis, cerebral palsy, and ulcerative colitis. Fractures, Legg-Calve-Perthes disease, scoliosis, rheumatic fever and failure to thrive patients were the major types of conditions requiring convalescent care.¹

APPENDIX II

SCHEDULE FOR THE STUDY OF LCPS
CHILDREN AT CHILDREN'S
SEASHORE HOUSE

Patient's Name

Age

Sex

Race: Negro White Mongoloid

Religion: Catholic Protestant Jewish

Others

Father's occupation

Family status: Intact

Child living in foster home

Broken home (child living with one parent or child living with unmarried mother)

Family income:  

<table>
<thead>
<tr>
<th>Class</th>
<th>Family Income</th>
<th>DPA*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class II</td>
<td>Less than $3,000</td>
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</tr>
<tr>
<td>Class III</td>
<td>$3,000 to $5,000</td>
<td></td>
</tr>
<tr>
<td>Class IV</td>
<td>$5,000 to $7,000</td>
<td></td>
</tr>
<tr>
<td>Class V</td>
<td>$7,000 to $10,000</td>
<td></td>
</tr>
</tbody>
</table>

above $10,000

Duration of hospitalization days

*Department Public Assistance
Patient's residence: New Jersey __________
Philadelphia __________
Other Pennsylvania beside Philadelphia ______
Delaware __________
Other __________

Patient's referral source:
Children's Hospital of Philadelphia (CHP) ______
Hospital of University of Pennsylvania (HUP) ______
Other Pennsylvania Physicians and Institutions ______
New Jersey Physicians and Institutions ______
Delaware Physicians and Institutions ______

Stage of disease when admitted:
Stage I __________
Stage II __________
Stage III __________
Stage IV __________

Stage of disease when discharged:
Stage I __________
Stage II __________
Stage III __________
Stage IV __________
BIBLIOGRAPHY

Books


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Report