CHILDREN AT THE KALAMAZOO STATE HOSPITAL 1859 - 1970: A DESCRIPTION OF THE POPULATION IN RELATION TO DURATION OF TREATMENT 1961 - 1967

THESIS FOR THE DEGREE OF PH. D.

MICHIGAN STATE UNIVERSITY

ROLAND GLENN STANLEY

1970

This is to certify that the

thesis entitled

CHILDREN AT THE KALAMAZOO STATE HOSPITAL 1859-1970:
A DESCRIPTION OF THE POPULATION IN
RELATION TO DURATION OF TREATMENT
1961 - 1967

presented by

Roland Glenn Stanley

has been accepted towards fulfillment
of the requirements for

Ph.D. degree in Education

Ronald A. Burke
Major professor

Date November 16, 1970

ABSTRACT

CHILDREN AT THE KALAMAZOO STATE HOSPITAL 1859-1970:
A DESCRIPTION OF THE POPULATION IN
RELATION TO DURATION OF TREATMENT
1961 - 1967

By

Roland G. Stanley

The subject for this study was an historical perspective of children's problems as they relate to the Kalamazoo State Hospital and a statistical description of the Children's Unit population in relation to duration of treatment. The initial sections of this study reviewed the history of the Kalamazoo State Hospital from the planning stages in 1850 to 1970. The major portion of the study describes the Children's Unit population from July 1, 1961 to June 30, 1967 in relation to admission facts and the dependent variable, duration of treatment. The predictor variables were: 1) age, 2) sex, 3) type of admission, 4) academic achievement, 5) condition causing admission, 6) intelligence, 7) socioeconomic status, 8) type of home, 9) parental stability, 10) presence of family psychiatric problems, 11) brain damage, 12) seizures, 13) prehospital treatment contacts, 14) ordinal position in sibling relationship, and 15) reported duration of problem behavior. The major theoretical assumption was that the duration of treatment of a child in a specialized psychiatric treatment facility in a state hospital is related to measurable and observable factors within that child and within his family

constellation. The basic question asked was: does a constellation of factors exist at, or near, admission of an emotionally disturbed child which has significance in determining the length of institutionalization?

Findings

The measures of central tendency and variability show that 1) the population is primarily an adolescent population, 2) the population demonstrates a normally distributed I.Q., 3) the subjects demonstrate academic retardation on an achievement test, 4) the subjects come from primarily low socioeconomic status homes, 5) prehospital treatment contacts varied in the extremes and 6) the mean duration of treatment was 26.53 months. Analysis further demonstrated that a constellation of factors, 1) age, 2) type of admission, 3) academic achievement, and 4) condition causing admission, is significant at the .10 level in determining duration of treatment. Numbers of prehospital treatment contacts and I.Q. scores may indicate a trend towards significance in relation to duration of treatment.

Major Conclusions

Although further testing for confirmation is required, this indicates that a constellation of admission factors exist that are significant in relation to duration of treatment.

CHILDREN AT THE KALAMAZOO STATE HOSPITAL 1859-1970: A DESCRIPTION OF THE POPULATION IN RELATION TO DURATION OF TREATMENT 1961 - 1967

By

Roland Glenn Stanley

A THESIS

Submitted to
Michigan State University
in partial fulfilment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

College of Education
Department of Elementary and Special Education

1970

ACKNOWLEDGMENTS

The author expresses his appreciation and gratitude for the aid and assistance given by Dr. Donald Burke, Chairman of the Guidance Committee. Also appreciation is extended to Drs. John Jordan and Lucy Ferguson for their assistance as members of the Guidance Committee.

Special thanks are extended to the Michigan Department of Mental Health and the Superintendent, officers, and staff of the Kalamazoo State Hospital. Without the support, technical help, and assistance of these agencies and their staffs, this study could never have been completed.

The author also wishes to thank his wife, Bethel, and his children, Kurt and Karla. Without their continued support and understanding, this study would have never been completed.

Finally, thanks are extended to those encouraging and helpful supporters who must remain anonymous because their numbers are so great.

TABLE OF CONTENTS

LIST OF TABLES

Chapter I

The History of Children at the Kalamazoo State Hospital

Pre-Service Era

Three years before Michigan became a state, the governing body of the territory, recognizing the need for welfare and protective services, created a Board of Superintendents for the Poor. The law, approved March 7, 1834, included authorization to "confine persons not of sound mind to county poor houses or jails" (Craft, 1964, p.1).

During the legislative session of 1848, eleven years after Michigan had become a state and the first legislative session after the seat of government had been established in Lansing, Michigan, there was an "...Act passed by the legislature April 3, 1848" which "created the trustees of the Michigan asylums" (Report of the Trustees, 1855, p.5). The act created a board of trustees for the Michigan asylums of the "Deaf, Dumb, Blind, and Insane". The legislation authorized no cash expenditure; however, it did encompass a land grant for raising funds. A defect in this law prevented the governor from naming the trustees until corrections in the act were made at the next session of the legislature. The trustees of the Michigan asylums were named in 1850. Immediately, this small group of prominent citizens set about to discharge their duties. The section involving the "Deaf, Dumb, and Blind" could be established on a temporary basis. These patients could be housed and

educated in temporary quarters. Care of mentally afflicted people could not be temporary, for the "Insane" needed specialized facilities.

The board of trustees of the Michigan asylums realized the impossible nature of their task and requested that three boards of trustees be created. They felt that each distinct handicapping condition was unique and deserved individual attention. The legislature saw fit to establish two divisions: one division for the deaf, dumb, and blind and one division for the mentally afflicted.

During this interlude, the board of trustees, as already established, was not inactive. Flint was the designated site for the "Asylum for the Deaf, Dumb, and Blind" and a temporary program was created. Kalamazoo was selected as the site for the "Asylum for the Insane". Since provisions for the insane could not be made in temporary quarters, a trustee was commissioned to visit "Eastern" asylums and recommend a building design.

The village of Kalamazoo had donated ten acres of land and $1,380 for the asylum's location in Kalamazoo. The original board of trustees accepted the gift, exchanged the land for 160 acres near the village and developed building plans.

The biennium 1853-54 placed the Michigan Asylum for the Insane under a new and independent board of trustees. All of the original trustees stayed with the board for the Michigan Asylum for the Deaf, Dumb, and Blind. The new

board for the insane encountered problems due to a lack of written records; however, the hospital building plans and site were available. They stated, "It also appeared that donations had been made by the citizens of Kalamazoo, in addition to ten acres of land, amounting to the sum of one thousand, three hundred and eighty dollars..." (Report of the Trustees, 1855, p.15). Even though the board appears to have had limited information available to them, their first biennial report expressed satisfaction with the progress to date. In discussing land acquisition and site changes, they stated, "The Board fully concurred in the judicious course pursued by the first Board of Trustees..." (Report of the Trustees, 1855, p.15).

The hospital was modeled, with improvements, after the state asylum at Trenton, New Jersey. The building was considered to be ideal for the isolation, classification, and care of the insane. Construction began in 1854 and progress was slow due primarily to inadequate funding. The report published in 1859 stated:

> Eleven years have now elapsed since the passage of an Act for the establishment of an Asylum for the Insane in this state. It is not to be supposed that the effort then made was at all premature; and if there really existed a necessity for such a provision at that time, how great must be that necessity now! Providence has not arrested the progress of the disease, because the State has neglected to provide for its victims (Report of the Trustees, 1859, pp.14-15).

Construction problems continued, including a major fire in 1858 which destroyed the center portion of the building. The destroyed area was to have served as the administrative

offices and professional residences of the institution.

The first patient was received April 23, 1859 (Report of the Trustees, 1866, p.15). Medical superintendent, Dr. E. H. VanDeusen, was reluctant to expand the hospital population because housing conditions were inadequate. The governor ordered the hospital officially open on August 29, 1859.

Service Era

Biennial reports, starting with the years 1859 and 1860, began to carry enumerative tables. Generally these early tables covered total admissions, age at admission, duration of the problem, diagnosis, mortality, nativity, and occupations for all patients admitted. No distinction other than age was reported for the childhood population in the Michigan Asylum for the Insane. During the biennial report for the period in which direct service started, 141 patients were admitted. Two male and 2 female patients were between 10 and 20 years of age (Biennial Report of the Trustees, 1861, p.27). The initial service report showed a similarity to current problems as it lamented an excessive waiting list. It also pointed out that the "friends of the insane", (those who asked for the admission of their loved ones) did not seek asylum treatment soon enough. The asylum wanted to provide crises care and not chronic care. Two factors, waiting lists and public resistence, prevented the administrators from fulfilling their desired role. "There is a too general disposition to regard an asylum or hospital

for the insane as the last resort..." (Biennial Report of the Trustees, 1861, p.36).

The one significant point in the report for the biennium 1863-1864 was the admission of 1 female child under 10 years of age (Biennial Report of the Trustees, 1864, p.21). The biennial report for the next period (1865-1866) listed 15 admissions under 20 years of age and reported, "...that four-fifths of those seeking admission have necessarily been refused" (Report of the Trustees, 1866, p.18). This biennial report also reviewed the history to date on an annual basis.

The year 1867 produced the first annual report. After eight years and two months of operation, 677 patients had been hospitalized. Of this total, the admission of 1 female under 10 years was recorded. The age group of 10 years to 20 years had produced 25 male and 26 female admissions. Superintendent Dr. E. H. VanDeusen expressed concern about the heredity and environment of children in this report. He stated, "The somewhat general impression that the child of a parent who has been insane is quite sure to suffer in the same manner, is by no means correct..." (Report of the Trustees, 1867, p.15). He stated further:

> In this connection, it may be of some advantage to suggest to the friends of insane patients, the importance of preventing intimate and protracted association with their children in the early years of their development, has frequently been demonstrated (Report of the Trustees, 1867, p.16).

The biennial report, including the period covered in the 1867 annual report, showed admission of an additional female

under 10 years of age. There was also an increase of admissions in the 10 to 20 year age bracket, including adults and children. These enumerative tables do not allow an accurate assessment of the numbers of children in residence. Dr. VanDeusen did state that, "Visitors frequently express surprise at the large number of youths of both sexes seen upon our halls" (Report of the Trustees, 1868, p.43).

During the next biennium, enumerative reporting was changed. Children were now defined as those under 15 years of age. A separate table for this age group was presented. It was shown that during the 11 year history of the institution, four males and five females under the age of 15 had been admitted. Of the nine patients, three died while in residence (Report of the Trustees, 1871, p.54). The enumerative tables also indicated that heredity was now being considered as an important factor in mental illness. "...36.27 percent had insane ancestors or dissolute parents" (Report of the Trustees, 1871, p.67).

Diagnostic skills were limited and sources of information were also somewhat limited. This percentage figure is still the largest single indicative factor in mental illness reported for this biennial period.

An additional comment of some consequence that parallels today's experiences was:

> Many of those under treatment are youths some of whom have been interrupted in their studies by disease while others have but few advantages, ... and the stage of convalescence in the case of the youthful is generally more protracted than in adulthood (Report of the Trustees, 1871, p.61).

Observations continued concerning the potential for education while in residence at the Michigan Asylum for the Insane. "The necessity for a good library will be recognized at once. Instruction in writing, vocal music, history, and geography are also very serviceable" (Report of the Trustees, 1871, p.61).

Comments about children and youth were few in the annual reports. The biennial report for 1875-1876 showed that 13 male and 13 females under the age of 15 years had been admitted. Of this total, 5 remained at the institution, 5 recovered, 4 died, 1 was released improved, and 11 were released unimproved (Report of the Trustees, 1877, p.105). This report also detailed a case summary to depict the hereditary potential of mental abnormality. The father was described as defective by virtue of epilepsy. The mother was essentially normal. The union produced nine children. Seven were epileptic and considered defective. Two children were normal. Of the seven defective children, one was deceased, two were very dull, and two were "former patients of this institution" (Report of the Trustees, 1877, p.175).

The reports continued with some mention of children and of their admission. In 1880, after slightly more than 20 years of operation, the report included another twentieth century explanation for the incidence of mental disorders. The rise in mental problems was related to the increased tempo of living and to crowded, congested living conditions

(Report of the Trustees, 1880, p.103). By November 1, 1880, the total treatment cases had reached 3,164. Of this number, 29 admissions were under 15 years of age (Report of the Trustees, 1880, p.101). Thus .9% of all admissions were children.

The biennial report published in 1900 showed 8,085 treatment cases admitted. Of this number, 50, or .6%, were under 15 years of age (Report of the Trustees, 1900, p.88). Children were not an important consideration in hospital life. The hospital, which had been started with such noble service goals and ambitions, had grown into a large custodial type institution. The wards were crowded beyond capacity. The increased population created depersonalization and less control of subordinates by the superintendent. In reporting this fact, the notes began with, "It is with satisfaction that...all persons resident within this asylum district for whom treatment was desired have been received..." (Noble, May 8, 1906). Warehouse service for the mentally ill developed through the years and carried forward until the advent of tranquilizing drugs. It was further exemplified by this statement about Michigan Asylum for the Insane from the minutes of a board of trustees meeting. "In fulfilling its mission, it has attained success like most other asylums along practical and economic lines" (Noble, May 8, 1906). The comments in this report are in no way meant to condemn the sincere and dedicated effort of the men involved. The changing nature of the role of the asylum was

dictated by legal and social events beyond their control.

Social awareness of changing times was indicated in the 1909 report which favored the legislative substitution of "...the word "hospital" for the word "asylum" in the names of our institutions for the insane" (Report of the Trustees, 1909, pp.15-16). The asylum's name was changed to the Kalamazoo State Hospital.

Medical advance was noteworthy and statistical reporting was expansive. There was little change in the picture of the mentally ill patients, however. Children appeared only in ennumerative tables. This was shown in the 1912 biennial report when statistical reporting added a category for ages five to nine. No child was admitted in this category. During the total history of the hospital, from August 29, 1859 to June 30, 1912, only 65 children to the age of 15 were admitted (Report of the Trustees, 1912, p.28).

During the next reporting period, the Binet-Simon test was instituted. It was "applied" to all patients classed as idiots and imbeciles. A total of 27 tests were administered (Report of the Trustees, 1914, p.72). This development preceded a most significant new program in the next reporting period. "Mental Out-Clinics" were established by the board of trustees in March, 1916. "The first clinic was held in Kalamazoo on March 21, 1916, and on each succeeding Wednesday, until June 1" (Report of the Trustees, 1916, p.20). The significance of this new out-patient

service was revealed in the ages and numbers of patients served. "At the Kalamazoo Clinic, we have examined in all 134 cases, 35 of whom were adults over 16 years of age and 99 of whom were juveniles" (Report of the Trustees, 1916, p.21). Children were finally being provided a very limited psychiatric service. The need for this service was evident in the disproportionate numbers of children evaluated in relation to adult evaluations.

The State Administrative Board did not feel it economically advisable to authorize the printing of biennial reports after 1916. One unidentified author reported, "There were no monthly reports during Dr. Ostrander's superintendency. Dr. Morter's first report was at the end of the fiscal year, June 30, 1938" (Untitled Bound Volume, Not dated, p.52). During this hiatus in reporting, a Social Service Department was established in September, 1921. The board of trustees was abolished in 1925 in favor of a State Hospital Commission. The commission functioned as the controlling body for state hospitals until 1945 when the law was changed to create a Department of Mental Health. Little of significance for children was reported.

The Annual Report for 1938 demonstrated that children were in need of psychiatric service. The "Out-Clinics", still operating in four cities, served 220 adults and 297 children during the year (Annual Report, June 30, 1938, p.41). This nearly equal representation of adults and children continued until Child Guidance Clinics assumed the

burden of evaluation and treatment of children's problems. The clinical director's report in an annual report for 1949-1950 stated of outpatient service:

> It will be noted that a few children are seen in these clinics, but these are seen only on an emergency basis, when appointment at regular Child Guidance Clinics cannot be had until some future date and immediate consultation and recommendation are urgently desired by the referring agency (Annual Report, 1949-1950, p.21).

During this same reporting period, 3 male patients under 15 years of age were admitted and a total of 20 patients under the age of 20 were admitted (Annual Report, 1949-1950, pp.27-28).

Children's Service Era

The decade of the fifties has been used as an indicator of change in relation to policies, programs, and numbers of children admitted for psychiatric service. The total admission for young people to age 20 remained rather static to 1953. During this fiscal year, admissions to age 20 dropped to 11. The first academic education position was established in this year. The annual report stated, "Educational programs have been established for the patients. Scholastic courses have been conducted for the younger patients" (Annual Report, 1953-1954, p.6). Although increased need for residential psychiatric service for children was becoming more evident during the early 1950's, the increased admission of younger patients probably resulted from administrative policy changes allowing for admission of more children to adult facilities rather than

from the increased need for service to children.

Several plausible explanations are available for the admission of more children to adult oriented hospitals. The first explanation is related to the traumatic social disruption involved in resolving the physical conflict of World War II. Family disruption and dislocation creates adjustment problems. The second is related to the absolute increase in population. Larger numbers of people raise the probable percentage of defective and damaged individuals. The third explanation is related to the increased proficiency of medical science. Many babies, previously doomed by ignorance, were now being saved by advancing medical techniques. In many of these cases, trauma to the nervous system foreshadowed successful maturation. A fourth explanation for the increased demand and need for residential psychiatric services for children is the refinement of diagnostic procedures and techniques for nervous, mental, and emotional disorders. Each explanation has the potential to stand alone as a cause for expansion of residential psychiatric service for children. Considered together, they cover the range of symptomatic disorders plaguing the inadequately staffed, and generally unprepared, state hospital. Kalamazoo State Hospital was no exception.

The first educational program was established for boys during May, 1953. Seven Gray Lady Volunteers conducted classes half days in a hallway 8 feet wide and 24 feet long. A public school teacher, who was an experienced hospital

employee, accepted a teaching position for the summer of 1953. With volunteer assistance, he attempted to organize an effective one room school with consistent policies and procedures. The school moved twice during his summer duty. It was settled in a very warm, but fairly adequate, hospital basement on a ground level.

Initially, the school had only male patients, ages 7 to 17, and a succession of full and half-time teachers. Conditions were difficult as educational supplies were scarce to nonexistent. Teacher tenure was short. At some later point during this formative period, an additional position of "Arts and Crafts" instructor was assigned to education from the adjunctive therapies department. This additional position allowed for a split in the boys' class. Younger boys, to about age 12, were in a small group. Older boys were assigned to the second group. Girls, probably because of their limited numbers, were not placed in a formal educational setting until October, 1958.

Children in a state mental hospital designed, staffed, and equipped for adults, present unique and challenging management problems. Disturbed children are often destructive. They are destructive of routine, equipment, facilities, and the tranquility of staff and fellow patients. The evolution of a school program was a move toward constructive treatment. School is the primary preoccupation of children in our society.

The school concept evolved gradually, and sometimes eratically, because of frequent staff change. In the spring of 1957, the school was without a teacher. The position was offered to an experienced hospital nursing aide who was about to receive his Master of Arts degree in Special Education from Western Michigan University. This employee accepted the position of teacher and remains on the staff as a supervisor.

In June, 1958, the education program enrolled 40 male patients. Thirty-two older boys studied with the teacher and 8 younger boys studied with the "Arts and Crafts" instructor under the direction of the teacher.

Admission of children continued to mount. Pressures for services were great. The budget for the fiscal year 1958-1959 for the Kalamazoo State Hospital included two additional teaching positions. This caused a scramble for facilities and staff. One room was partitioned and two teachers were employed during September and October of 1958. This adjustment of staff and facilities reduced the class load to about 15 students. There were now three classrooms for boys and one for girls. This was the first entry of girls into the program. The school was growing.

During this period, the American Association of University Women in Michigan adopted as a project, the creation of adequate child care facilities in the state hospitals in Michigan. Great pressure was brought to bear upon the Department of Mental Health and the legislative bodies

in Michigan to create special care facilities for children with psychiatric problems. In the fall of 1958, the Department of Mental Health revealed a preliminary budget sketch at an open meeting for interested citizens groups. This budget showed that in excess of 600 children were confined in state financed psychiatric facilities. Less than 150 of that number were segregated from adult patients in their living accommodations. This segregation was accomplished in two special facilities for children and one special research facility. State hospitals were afforded no opportunity for the segregation of children from adults. During this same public meeting, plans were revealed to request money for six special facilities at the six state hospitals in Michigan. The department wanted six 100 bed facilities for children. The resident population was already nearing that figure.

Legislative deliberation was difficult because of the priorities on financial resources. The Kalamazoo State Hospital found itself in an advantageous position because of advances in general medicine. The 150 bed Mary Muff Tuberculosis Hospital, constructed in 1939, could be altered to a children's unit because its primary function - the care of tubercular mental patients - had been effectively controlled and reduced as a medical management problem. The fiscal year 1960-1961 budget for mental health contained $35,000 to remodel Mary Muff Hospital at the Kalamazoo State Hospital. This building was to be a children's unit

with school facilities. This 81 bed children's unit was opened during March of 1961.

When this facility opened, the school staff had been expanded by three. There were six teachers and one supervisor. There were also two occupational therapists, one music therapist, and one recreational therapist for ancillary educational services for children. The Children's Unit was also fairly well staffed with nurses, nursing aides, psychologist, two social workers, and a coordinator of children's services.

Forty-five of the 80 young patients in the hospital during March, 1961 were transferred into the new facility. The many problems inherent in establishing a new care program were experienced. A "new" program was established primarily because of administrative foresight. Experienced employees transferring to the program were limited and carefully screened. Many employees were new to state hospital work. Because of this careful selection of employees, a truly new program was allowed to develop. The traditional concepts of the old established state hospital program were not allowed to engulf the new program.

The Children's Unit program was new to the Kalamazoo State Hospital. It was also the initial effort in a state hospital for the Michigan Department of Mental Health. This new program was kept on a carefully controlled schedule of progress. By 1962, the hospital population of children had expanded beyond the limits of the Children's Unit building.

The program was progressing well and the demand for services exceeded the space provided.

In early 1963, the supervisor of special education began tutoring the overflow children on the wards where they lived with adults. This action lead to a tutorial agreement whereby junior and senior students in special education at Western Michigan University tutored hospitalized children. They worked 3 hours a week under close supervision. This cooperative university credit program still exists between the Special Education Department of the university and the hospital. It is a demanding program, but it is educationally rewarding for the students involved.

After some time with tutor service, educational effort still failed to meet the need. The numbers of children continued to grow and services provided were inadequate.

During the spring of 1964, a special grant from the Department of Mental Health allowed the hospital to hire two additional teachers. These teachers were placed in detached situations on the Male Receiving and Female Receiving Hospitals at the Kalamazoo State Hospital and the cycle started again. The classrooms were hallways 8 feet wide and 24 feet long. One was in the Male Receiving hallway where school was initially established in 1953. This additional program for children helped fill the gap between the desirable and the ridiculous.

On November 1, 1964, an amendment to Public Law 89-313 provided funds under Title I of Public Law 89-10: the

Elementary and Secondary Education Act. Institutional schools were to be awarded "additional" funds on a per capita basis, coordinated by the Department of Mental Health through the Department of Education. The Kalamazoo State Hospital was awarded in excess of $30,000 the first year to: 1) create a satisfactory primary educational setting, 2) establish a Receiving Children's Unit school program, and 3) create a Prevocational Habit Training program. The first two programs were initial effort programs. The third program was a sustaining program.

The program of primary education was established first. A good primary room was arranged and equipped. This proved to be a great asset to little children who had been accustomed to 30 inch tables and 18 inch chairs.

The second portion of the program was coupled with an unsupported hospital effort. The Kalamazoo State Hospital, without additional funds, created a Receiving Children's Unit with 18 beds. Federal grant funds created an academic classroom and a crafts classroom for the children involved. This program has always contained younger, hyperkinetic, organically involved children. The carpeted classroom with study carols incorporates many concepts presented by Cruickshank (1961). In March of 1966, this program was fully established.

The third program, Prevocational Habit Training, was planned for nonacademic oriented male patients, ages 14 to 21. In March of 1966, it was a partially staffed program

without permanent classrooms. The remodeling necessitated extensive physical changes. It was not fully operational in renovated quarters until March, 1967.

The Prevocational Habit Training concept was new to education and Children's Services at the Kalamazoo State Hospital. It was designed to create acceptable habits and attitudes for minimal employment. These were to be accomplished through manual training skills, physical education training, academic training, and supervised hospital employment. No child was to miss more than one-half day of school until he was assigned employment outside the hospital. The most surprising aspect of this program has been the drive for increased academic training. This motivation was not anticipated and cannot be fully explained as yet.

The program has been judged successful in its training goals. It is conducted in a building completed for occupancy in 1874. The young patients are still forced to live in inadequate accommodations; they are mixed with psychotic adults in their living quarters.

Adolescent girls in Prevocational Habit Training also live on mixed wards. They are housed in very pleasant living quarters in one of the newest patient housing buildings at the Kalamazoo State Hospital. In March, 1969, remodeled classrooms were provided for these girls.

The expansion of school quarters and staff for Prevocational Habit Training - Female was made possible by a

supplemental grant to Public Law 89-10, Title I funds already being provided. The additional funds provided a Home Economics classroom, an academic classroom, and a crafts room. The additional funds also provided for an occupational therapist and a Home Economics teacher.

Children's Services at the Kalamazoo State Hospital are theoretically responsible for 120 children to age 17. The number frequently rises above that theoretical figure. Services are provided by about 85 people. This number includes 1 psychiatrist, 1 program director, 3 social workers, 1 psychologist, 3 secretaries, and 20 ancillary service personnel assigned to educational services. The remainder are nurses and nursing aides. The staff provides full care for about 100 patients. It also provides instructional and recreational services to other young patients living on adult wards. These figures include additional patients receiving instructional day-care services only.

Children's Services at the Kalamazoo State Hospital has evolved to an efficient, effective full range psychiatric service for children. The services provided are: 1) evaluation and screening of reported children's psychiatric problems, 2) day-care services for those children in the area able to benefit from this type of service, 3) night-care service for those advanced treatment students who are attending local public schools, 4) residential treatment for those children in the 13 county service area needing this residential service, and 5) after-care service

for those children not located near an organized after-care center.

On January 1, 1970, Children's Services at the Kalamazoo State Hospital had a treatment population of 127 from a total resident population of 135. Five patients were unable to benefit from Children's Services and 3 were in transit to Children's Services from admission procedures. There was a waiting list of 12 males and 2 females.

Chapter II

The Problem

In the 1940's, a trend away from institutionalization of youth was caused by two factors: the development of public assistance (welfare) and repeated studies which detailed the adverse affects of institutionalization. Children were reported to be stunted in emotional development (Bowlby, 1951, Goldfarb, 1943, & Levey, 1937) and infants were observed who withered and died without the emotional stimulation of a family situation (Ribble, 1943, & Spitz, 1949). The negative attitudes towards institutionalization created by this research remain as one stumbling block to expansion of public institutions for emotionally disturbed children. Another stumbling block is cost, as psychiatric care at a state hospital is at public expense. Hollingshead and Redlich say, "Clearly, no inexpensive and effective methods of psychiatric treatment exist at the present time..." (Hollingshead & Redlich, 1958, p.372). The influential social classes controlling expenditures of public funds, reason expenditures in terms of "nice" and good children as related to "bad" and crude children (Hollingshead & Redlich, 1958, pp.362-363). This attitude hampers the more fruitful and often expensive efforts of treatment and substitutes legal efforts of social control. The discrepancy between the supply of in-patient treatment space and the demands for the use of that space will remain

for the foreseeable future.

Need

Large numbers of children in state hospitals are a relatively new phenomenon. Children's programs have evolved to meet the unique and special needs of the children being introduced into these previously adult oriented facilities. Effort has been expended to describe programs for children in state hospital facilities. Activity oriented programs have been depicted. Educationally oriented programs have been presented. Total admissions of children to adult facilities have been evaluated. Very limited systematic research is available on children's units of state hospitals.

Factors influencing patient movement through a children's unit is the concern of this project. Rate of progress is a significant problem in the management of children's programs in a psychiatric setting. Children must move out of treatment institutions if additional children are to be received and treated.

Available treatment facilities must be used to the maximum effectiveness. Discovering significant factors in length of stay at, or near, admission improves the potential for maximum utilization of facilities. The possibility of dichotomizing the hospital children's population into short term care and long-term care groups can enhance treatment programs. A stratified treatment approach as reported by Fish and Shapiro (1964, pp. 75-86) has the potential of

improving treatment success. Accurate prediction of duration of treatment would allow effective stratification of residential treatment programs.

Describing the population in relation to duration of treatment should also provide more accurate information on the need for future expansion of services. It should also demonstrate the maximum potential of a children's psychiatric service facility and aid in the maximum use of that facility. These points are of constant concern to administrative authorities in mental health agencies.

Demands for psychiatric service for children exceed facilities available to provide that service. Children are forced to wait weeks or months for psychiatric service that is needed immediately and no relief is in sight. At this point in time, nearly half of the population of the United States is young. Packard states, "Approximately half the population already is under 27" (1968, p.24). The need for increased services of all types will increase rapidly in the near future. This "population explosion", plus refined diagnostic techniques, will continue to press for increased residential care for children.

Theoretical Background and Basic Research Questions

Dependent Variable

Duration of treatment. In this study, the major theoretical assumption is that the duration of treatment of a child in a specialized psychiatric treatment facility in a state hospital is related to measurable and observable

factors within that child and within his family constellation. This position is in accord with the findings of Swanson (1959), Pearson (1964), and Jenkins and Gruel (1959) that factors are available at admission or early in the care sequence of adult institutionalized mental patients which predict duration of treatment or early release. Only limited descriptive information is available in the literature on significant factors in the duration of treatment of children in specialized facilities.

The study examines the significance of the relationship between a series of factors and the duration of treatment of hospitalized disturbed children. The primary question to be answered is: does a constellation of factors exist at, or near, admission of an emotionally disturbed child to a mental institution which has significance in determining the length of institutionalization? Additional questions are: what factors are significant in release during the first year, during the second year, during the third year, or at some period after the third year of hospitalization? Of additional interest, is an accurate description of the Children's Unit population in relation to the factors selected for study.

Predictor Variables: Theoretical Issues

Fifteen factors which appear to have relevance in describing the population in relation to admission and duration of treatment have been identified. Intelligence, academic achievement, age, sex, evidence of brain damage,

prehospitalization treatment contacts, duration of problem behavior, family socioeconomic status, ordinal position in sibling relationship, type of home (paternalistic or maternalistic), condition causing admission, family instability, type of admission, seizures, and presence of family psychiatric problems will be tested for significance against admission and duration of treatment. These factors were isolated as important in considering the problems of children because of their availability in historical data, their identification in the literature, by professional consultation, and by past professional experience.

Age. Children, for the purposes of this study, range from age 7 to age 17. Experience has shown that a child must be a very serious disturbing influence before a family is willing to entrust a mental institution with his care. As a consequence of this situation, most state hospitalized young children have very serious types of problems and need long periods of care. Children who have reached adolescence in a relatively normal mental state before problems arise, have a normal foundation upon which to build. Although it is reported as necessary to intervene early for successful psychiatric treatment, children appear to need longer periods of care. Fletcher reports, "There is a correlation between the age of the child on admission and the rate of moving out of the hospital environment. The younger the child, the longer he stays in the hospital before first movement out of it" (1959, p.57).

Sex. Sex linked variables affect most research. Sex is a variable that must be evaluated. In mental health care of children, experience indicates that a family will part with a son for psychiatric institutionalization earlier than they will part with a daughter. Boys are admitted to hospitals at earlier ages and in greater numbers. National statistics indicate that three times as many boys are treated for psychiatric problems as are girls (United States Public Health Service, 1969, p.19). Local experience supports this conclusion. It is important to control for sex because of the imbalance in residential treatment numbers and the sex differences in average age at the inception of treatment. The descriptive data will explore sex difference in detail.

Type of admission. The type of admission has been dichotomized. There are only two ways for a child to stay in a state hospital. One is by court order; the other is voluntarily under parental control. There are three court related ways to enter a state hospital in Michigan. The court may enter a permanent, diagnostic, or emergency order for commitment. All court orders are resolved by permanent commitment orders or releases. This study is concerned only with those who stay in a hospital voluntarily or under a permanent court order.

Treatment generally cannot effectively begin until a child has joined the treatment effort by accepting hospitalization. This is usually not accomplished under temporary

or emergency procedures.

Academic achievement. "Achievement tests attempt to determine how much a person has learned from some educational experience" (Chronbach, 1949, p.270). Children hospitalized for emotional problems have been exposed to some educational experience. Their function in relation to age-grade expectation is significant. Chronbach reports, "Achievement tests have clinical and predictive uses..." They "are . useful in evaluating and diagnosing mental deterioration from organic or emotional causes..." (1949, p.272). A child's educational standing in relation to other factors in the case history data should prove to be a valuable descriptive aid. His ability to absorb content materials is important to his reinsertion in a community social setting.

Condition causing admission. The condition causing admission is forced into three categories: 1) acting-out aggressive behavior, 2) depressive-withdrawal behavior, and 3) hyperkinetic behavior. These three classifications of behavior were determined with psychiatric, psychological, and social work consultation. It is possible to classify behavior by many different scales. This study was limited by the historical data available. The three categories could prove inadequate because the greatest number of admissions are related to acting out-aggressive problems. This type of behavior poses a social threat and demands attention. Depressive-withdrawal behavior does not present

an intolerable problem at an early age. The school and other social institutions do not usually become seriously concerned with the young person who is noninvolved with his peer group. Hyperkineticity is socially debilitating because of the disorganizing effect it imposes on the groups in which the child is normally involved.

Intelligence. Intelligence was selected because it is a concept with some status in society. Intelligence is measurable with a standardized instrument. Rapaport says, "...intelligence is still being dealt with chiefly in terms of I.Q." (Rapaport, Gill, & Schafer, 1968, p.64). Our purpose is to deal with intelligence in terms of I.Q. Recognition is not given to the potential for increased functioning. The problem of description from data available now does not allow speculation about future functioning in a test situation. Extraneous influences, important as they may be on an I.Q. test score, do not effect the tabulation of that score.

Socioeconomic status (S.E.S.). Many schemes are available to determine socioeconomic status. The occupational socioeconomic index developed by Otis Dudley Duncan (Reiss, 1961) appears best suited for this research. This scale is the least complicated and most efficient S.E.S. scaling device available for this type of study. It is applicable for this project where previously collected historical data are employed. The available data must be used.

The occupational socioeconomic index employs the occupation of the child's father or father substitute providing primary family support. Occupations are scaled with a value from 1 (lowest) to 100 (highest). Duncan reports, "...in all likelihood the great majority of children may be adequately classified according to the occupation of their parents, grandparent, or other relative with whom they live" (Reiss, 1961, p.149).

Type of home. The type of home refers to maternalistic or paternalistic control or domination of familial decisions. Social workers are quick to note interaction patterns of a family unit. One parent is almost always very dominant. Is this significant? It appears that control and direction are necessary. Someone has to make decisions for a child to grow up successfully. It is hypothesized, however, that the type of home - maternalistic or paternalistic - is not significant in its effect on duration of treatment. No provision was made for passive couples. Consultation indicated that it is a rare phenomenon for both parents to be extremely passive.

Large numbers of children grow up in fatherless homes. Mothers frequently work. This condition will also be reflected by the number of paternalistic versus maternalistic homes. Packard notes that sporadic employment for the mother seems to be "One of the worst situation (sic)" (1968, p.371). The significance of the absence of one parent or the other will be evaluated by the factor dealing with

parental instability.

Parental instability (loss of parental support). Any situation causing prolonged or permanent separation from parental figures is significant in the duration of treatment for children with psychiatric problems. Death, divorce, desertion, or prolonged illness in a parental identification figure is traumatic for a child. Fletcher determined that family disruptions had detrimental affects on children in relation to prehospital contacts. The concept of detrimental effects on children through loss of parental support parallels, at a later age, the conclusions of Bowlby (1951), Levey (1937), Goldfarb (1943), and Fletcher (1959). Children need some consistency of love, attention, and emotional support to grow into healthy beings.

Presence of family psychiatric problems. The presence of psychiatric problems in the family could be indicative of genetic or social defects within that family. Depending on their location within the family structure, these problems are traumatic and disruptive in varying degrees to the individual family members. Social problems, thus created, are probably the most severe to be faced by the family.

It is suspected that the closer the relationship to the child, the more disruptive the family psychiatric problems will be to him. If parents have diagnosed psychiatric type illnesses, their children will react more strongly than if other members of the family are mentally ill. This

factor should cause longer periods of treatment for children who come from families unstable because of mental illness.

Brain damage. Knowledge of the human organism is limited. New instrumentations and techniques have created a situation whereby brain damage can be identified. Neurologists diagnose organic damage. Two technically trained specialists aid in this diagnosis: the psychologist and the electroencephalograph technician. If one specialist identifies patterns of organisity and if one other specialist agrees, brain damage is determined to be present in the child in question. The tools and techniques which these specialists use are admittedly crude. The concept is included with an understanding of its limitation.

Seizures. Many children referred for psychiatric service are reported to have "seizures", "blackouts", and "spells". Experience indicates that very few problems reported as being related to seizure-type episodes are confirmed as epileptic-type seizures. Those few confirmed cases of seizures generally appear to present their problems as ancillary to, but not as a direct result of, seizures.

A seizure can be described by almost anyone. A seizure producing condition is diagnosed by a physician. This diagnostic situation entails: careful observation, detailed reporting, and medical tests. Several of the tests are those employed in diagnosing brain damage. The electroencephalograph displays distinctive patterns for the majority

of those individuals who have organic conditions which produce seizures. The probability of error is between 10 and 20 percent. Clinically normal people display abnormal brain waves and epileptic people have clinically normal brain wave tracing patterns 10 to 20 percent of the time. These percentages eminate from various control populations (O'Leary, 1962, p.217).

Prehospitalization treatment contacts. Prehospitalization contacts are a function of illness. These contacts indicate a duration of illness prior to hospitalization. Fletcher reports that the number of prehospitalization contacts children experienced was significant in determining length of treatment (Fletcher, Schroeder, Marshall, & Marckwardt, May, 1960, p.14). This is a reasonable assumption without supportive research data. Fletcher also states, "..., a child committed at the age of seventeen would have ten more years to contact agencies prior to commitment than a child committed at the age of seven (Fletcher, et al, May, 1960, p.16). With some children, prehospitalization treatment would be a function of age; with others, a "crisis" precipitates institutionalization with few or no previous treatment contacts.

Ordinal position in sibling relationship. "Authorities" are regularly quoted about sibling relationship, sibling rivalry, and the significance of sibling ordinal position in some aspect of human endeavor. It is hypothesized that ordinal position of young residential patients has no

significance in duration of treatment in a state hospital children's unit. It will be interesting to note the relationship of sibling ordinal position in children in residence in patient psychiatric service.

Reported duration of problem behavior. Many children present problem behavior to the family unit or to other social units prior to being referred for treatment. Small numbers of children are now reaching the state hospital residential treatment center without having had any prior treatment contact. In all cases, a child and his family should be provided service when service is indicated, recommended, and desired by the family. In some cases, the social problems have so exacerbated that treatment is instituted by court order without family approval. This less than desirable situation renders questionable the reported duration of problem behavior. Social case history data and cooperation are generally limited in forced treatment situations. The most desirable situation is the voluntary-cooperative treatment contract. Social workers collect data relating to the time aberrant behavior was first noted as part of the routine development of a social case history. This is reported in exact or general terms, depending on the informant. This report employs general terms for duration of problem behavior.

Research Objectives and Purpose

The objective of this research is to develop a set of enumerative and descriptive statistics for selected admission data and to test the significance of these data on the duration of treatment of children in residence in a state hospital children's unit. The population will be described in relationship to admission and duration of treatment. The chi-square test of significance will be applied to the data to determine if some variables are significant in determining duration of treatment for children admitted to the Kalamazoo State Hospital.

There are 15 predictor variables to be tested for significant relationships to the dependent variable duration of treatment. Each predictor variable appears to have relevance to the dependent variable. Previous research, professional experience, and professional consultation limited the predictor variables selected to those items practical for, and accessible to, this type of research. Some of the variables selected could prove inefficient in determining significance or as descriptors of the population.

The purpose of the research is to describe the population at admission and test the significance of the descriptive factors against duration of treatment. The factors selected for evaluation are routinely collected at the Kalamazoo State Hospital as at most treatment facilities.

Importance of the Study

This study is important because of three assumptions: 1) residential treatment space for seriously disturbed children is in critically short supply, 2) description and significance testing with data is necessary in initial research efforts, and 3) significant facts will stimulate further investigation. This study will aid in facilitating maximum use of available facilities. In fact, it could lead to more efficient treatment procedures for the young residential patient in a state hospital setting.

Descriptive admission data and analyses of those data as related to duration of treatment in a children's unit of a state hospital should provide more accurate information on the length of treatment. It will provide information on factors affecting length of confinement. Social agencies and probate courts utilizing the services provided will be able to predict, with some degree of confidence, the potential and the limitations of psychiatric care space available for children under their jurisdiction. The paucity of research on residential care for children is evident in the lack of an organized body of knowledge available to the researcher. Additions are necessary to facilitate and coordinate treatment efforts.

Limitation of the Study

The data gathered for this study are from the children's unit of one state hospital in a progressive, industrialized, mid-western state. The Kalamazoo State Hospital, Kalamazoo, Michigan has been developing and expanding children's services since 1953. The Children's Unit opened in March, 1961.

Pressures for services for children at Kalamazoo State Hospital have been developing so rapidly that the present Children's Unit is not sufficient to handle the numbers of children referred. The children's unit concept has now changed to a children's services concept and other areas within the hospitals are being employed for the care and treatment of children. The present study by design, and as a result of changing times, is limited to a controllable segment of a children's population in a state hospital - children in children's units.

A second factor limiting the study is the geographic location of the institution involved. The Kalamazoo State Hospital serves a geographic area of about 1,500,000 people in rural and urban settings. The data did not allow effective access to rural-urban designations. The study concentrates on factors within the child and the child's family for significant relationships. Unidentified social factors relating to geography could contaminate the research.

Administrative policy is another factor of concern. Hospital policy is generated at the top in a centralized authority. The Department of Mental Health is this legally constituted authority. The research period has seen several major personnel changes in this authority. This has naturally affected policy.

Policy is translated into action by local authority. The hospital in this research has displayed remarkable personnel stability in all important areas related to the care and treatment of children during the research period. This should present consistent data for research purposes.

Treatment philosophy is not accounted for in this project. It is assumed that residential in-patient treatment of children is dictated by observable behavior and traits within the child and his environment which created "presenting problems". Many agencies serve as "case finding" units for a state hospital children's unit. The state hospital is obligated, within space limitations, to care for those children referred who are not amenable to local agency treatment techniques. These children are frequently referred for "long term treatment" by the "case finding" agencies. The presenting problems are often felt to be within the family. Fletcher says:

> Broken families, incompetent families, or multi-problem families so beset with their own worries that they cannot give much attention to the emotional needs of the child, not only tend to intensify the child's problems, but also thrust the child onto the community for some type of placement (May, 1960, p 3).

It is certainly reasonable to conclude that placement in a state hospital residential setting is not the first response society makes to the needs expressed by troubled children. Treatment philosophy coupled with the demand for service cannot hold a child in a residential setting far beyond a logical release date. Children must be returned to the referral source to make way for new admissions.

Education is an integral part of residential treatment for children. The children's unit described in this project has educational services. Those children's units not providing for this primary pre-occupation of children will find the data collected not applicable for comparison.

The universe for data collection is small. The universe for testing the data is equally limited in size. These data, by virtue of their limitations, should be indicative only of future research needs. Prediction is a "...tool in the science of hypothesis testing" (Sargent, 1960, p.10). The real problem presented is understanding the data. The interpretation, although directed at specific questions, may not be sufficiently clear from the data available to warrant valid conclusions.

Research is lacking in state hospital children's unit care for children. This research, about children in a state hospital, has been attempted by an educator. It was conceptualized within the framework of educational needs of children. It has as its prime interests, the duration of treatment with regard for the educational needs of

children. A different professional orientation would approach the data differently. The description will be according to data and the data are viewed from an educator's perspective.

Education is an adjunct of, and ancillary to, treatment. Its importance rests with the fact that a child must return to society. Society, through its legal system, requires compulsory attendance at educational institutions. Society, also through its legal system, limits meaningful labor and prevents exploitation of children. Thus treatment without educational service for children is doomed to failure. Children cannot be therapeutically returned to society without continuity of educational service.

Chapter III

Review of the Literature

In 1955, Congress, with Public Law No. 182, created the Joint Commission on Mental Illness and Health. The mandate for this commission was to "...survey the resources and to make recommendations for combating mental illness in the United States (Joint Commission on Mental Illness and Health, 1961, p.v). The final report of this organization, Action for Mental Health, is noteworthy for its neglect of the mental health problems of children. The omission is understandable due to the scope and complexity of the problems to be investigated. Concerned professional and lay groups organized immediately to press for an additional study to explore mental health problems that relate to children.

In 1965, Congress passed a law that included a framework for the Joint Commission on Mental Health of Children[1] (Joint Commission on Mental Health of Children, 1969, p.iv). This commission is in the process of producing their final report, Crisis in child mental health: Challenge for the 1970's. All that is available at this time is the summary digest. The summary paints a bleak picture of mental health service efforts for children. "Mental health services exist for only about seven percent of the identified population in

[1]The full report Crisis in Child Mental Health: Challenge for the 1970's "is soon to be published" by Harper and Row. (p.ii)

need, and these are dispensed mostly to the affluent" (Joint Commission on Mental Health of Children, 1969, p.21). This report further indicates

> Our lack of commitment is a national tragedy... Studies indicate that most children, regardless of race, whether in the ghetto or in suburbia, do not receive the needed support and assistance from our society. ...Those who are the most helpless are the most neglected (Joint Commission on Mental Health of Children, 1969, p.5).

The material gathered indicates that on a trend basis over 52,000 children, ages 10-14, will be hospitalized in state and county mental hospitals by 1970. These institutions are generally ill equipped to meet the educational and treatment needs of this rapidly increasing segment of the population. These hospitals are characterized as "the state institution treadmill" and massive warehouses (Joint Commission on Mental Health of Children, 1969, p.4).

The revelations of the summary are not new to individuals active in child mental health programs. These workers are aware of the alarming trend to increased admissions. They are active in attempting to implement new programs and struggle to reinforce existing programs.

Models for program development are not readily available. Aichhorn (1935), Bettelheim (1950), and Redl and Wineman (1957) have presented classic descriptions of philosophy and programs. Aichhorn (1934) presented a practical guide based on psychoanalytic concepts for working with delinquent children. Bettelheim (1950) published a technical psychoanalytic approach for very seriously disturbed children.

Redl and Wineman (1957) created an experimental demonstration project based on ego psychology. These classic presentations are not oriented to the magnitude of the Crisis in Child Mental Health or the problems of public institutions.

Alt (1961), in his description of Hawthorne Cedar Knolls and Kornberg's description of a classroom program at the same residential institution, present concepts that are transferable to large public institutions. The descriptions are theoretically oriented. No statistical basis exist for evaluation. Treffert (1968) presented an administrative model for state hospital care of children. This report is important. It is difficult to locate studies with statistically descriptive information about children in state of county mental hospitals. Nothing is available on children's units.

Fletcher (1960) analyzed the prehospital treatment contacts of children admitted to two large state hospitals in Michigan. He found the number of prehospital treatment contacts significant in relation to several factors. This study was conducted prior to the development of children's units in Michigan's state hospitals. The children were housed with, and treated much as, adults. Embryo school programs were developing at the time of the study.

Fletcher (1960) was interested in the relationship of the frequency of prehospital contact to 1) "First Movement out of the Hospital", 2) "Characteristics to (sic) the

Child", and 3) "Characteristics of the Family" (p.iii). He found that children with the most prehospital contact spent more time in the hospital even though "Movement rests upon judgements that are the basis of administrative action relative to the child" (p.10). Fletcher (1960, Ch. I) also checked age, sex, race, year of admission, and diagnosis as characteristic of the child against number of prehospital contacts before first movement out of a hospital. Age was significant, but sex and race were not. Years of admission, checking the 30's and 40's against the 50's, was not significant, although the trend in prehospital contacts was downward. Diagnosis was significant at one hospital and not at the other. This was partly due to the length of operation of the hospitals as one was a fairly new unit.

In the area of family characteristics, Fletcher (1960, Ch. VI) checked relatives who were treated for mental illness, family intactness, religious preference, size of the family, occupation of the father, and birthplace of the child. Family mental illness was not significant, although 22.7% had relatives who had been treated for mental illness. "The number of prehospital contacts varied in direct proportion to the degree of intactness of the family" (p.24). Religious preference of the family and family size are both significant in relation to prehospital contacts. The occupational status of the father, as a measure of S.E.S., presented a significance level that was very high. Children who had limited contact with a father due to death, longtime

hospitalization or imprisonment had the greatest prehospital contacts. Birthplace was not a significant factor.

Fletcher (1960) checked a large number of factors in relation to prehospital contacts. The factors checked, which parallel factors in this study, demonstrate the same directionality as those factors present in the analysis of data in Chapter IV.

Faux and Farley (1968) described a hospital youth center at the Utah State Hospital. The program provided day services with the children returning to 13 different wards after the day program. Programming for children was designed to fit within the therapeutic community concept in existence at the hospital.

A unique feature of this report was the statistical basis for conclusions. It considered the child from preadmission selection to follow-up interview. The report was based on 10 separate thesis projects, not all of which were covered in the article. One statistical report which compared favorably with data developed in the author's research is that 43% of the children were known to be from intact homes. Taylor (1967), Sonntag (1967), and Farnsworth (1967) studied the history of the youth center, family functioning, and a description of the patients respectively at the Utah State Hospital. These thesis studies are of interest to the current study.

The history of the youth center of Utah State Hospital is a narrative, non-statistical study and has many parallels

to the history of children at Kalamazoo State Hospital. Utah State Hospital evolved a "therapeutic community concept" children's program because they could not successfully recruit staff for a children's unit (Taylor, 1967, p.5). Their program, as described, appears sound. Education is mentioned, but no educators are listed on the staff of the hospital (Taylor, 1967, p.8).

Sonntag (1967) statistically describes family functioning. The "youths" were classified as from "Stable Families" or "Broken Families". Eighty-nine families of discharged children were contacted and of this total, 52 were considered broken families and 37 were considered stable families. These two groups were analyzed on the basis of age, admission and release, attitude toward parents, attitude toward child, community factors, pride, diagnostic factors, and youth program. The null hypothesis was that the groups were the same. This hypothesis was rejected because significant differences exist (Sonntag, 1967, p.32). Children from broken homes were younger, had different diagnoses, and returned to their own homes less frequently. Families of children from broken homes sought help in solving their children's problems less frequently (Sonntag, 1967, Ch. IV).

This study indicated that broken families are multi-problem families. The children of multi-problem families needed help. These children needed help for different reasons, at younger ages, and longer periods of time than did children from stable homes.

Farnsworth (1967) described the Utah State Hospital youth program on a statistical basis. His description, encompassing 16 factors, presented percentage data on 6 factors of interest to the current study.

The population age range was from 5 to 19 years and 100 of the 129 cases described were above 12 years of age. The largest category was ages 15-16 and encompassed 35.66% of the total population. Sex distribution approximated a 2 to 1 ratio with 65.90% males and 34.11% females. Intelligence was distributed on a scale with 10 point intervals ranging from less than 69 I.Q. to over 130 I.Q. The average group, from 90 to 109 I.Q., was 31.01% of the population. The dull normal group was 24.04% and the unknown comprised 24.04% of the population. The remaining 20.91% had 5 other categories to fill. The S.E.S. of the subjects' families was probably low. A judgement is difficult because 49.62% of the cases were not classed for family income, while 32.57% had incomes below $6,000 annually. Duration of hospitalization was short and rated in terms of days. Only 44.19% of the group stayed longer than 181 days. Most of the research population, 82.95%, had some form of prehospitalization contact (Farnsworth, 1967, Ch. IV).

Farnsworth's study (1967) is limited in value for generalization because of the religion characteristic of the state of Utah. Latter Day Saints made up the majority of the population of the state and of the youth center.

Farnsworth states:

> L.D.S. religion accounted for 69.77% of the patients of the Youth Program. This would appear to parallel very closely the state population in terms of L.D.S. (1967, p.50).

Summary

Several classic descriptions of philosophy and programs are available. Limited descriptive data are available on youthful residential populations, particularly for large state hospitals. No descriptive studies are available on children's units in state hospitals. The group project at Utah State Hospital Youth Center presented data within a comparable range, but data limited in content.

Chapter IV

Methodology and Research Findings

In this chapter, the population is specified and the data collection procedures are described. The procedures used to answer the questions asked of the data are given and the analysis of the data is presented. The analysis of the data is ordered as the factors for analysis were ordered and developed in Chapter II.

The Population

The subjects to be studied are children, ages 7 to 17, admitted to the Kalamazoo State Hospital and subsequently transferred to the Children's Unit building. The time span selected for study was July 1, 1961 to June 30, 1967. During this period of time 198 children, or one-half of the total admissions, were transferred to the Children's Unit building. Of this total, 22 remained in residence on January 1, 1970 and were consequently dropped from the data analysis (see Appendix B). The sample size for the study was 176.

Data Collection

The data collected for this study are historical data. These data were developed and compiled by the psychiatric social worker. Several pieces of data were supplied through medical, educational, and psychological services. The case

history is compiled as an aid to treatment and is kept current throughout the patients' period of care. The basic case history data are available at, or near, admission on all children.

The data collection sheet was prepared to facilitate translation of the information coded for direct transfer to the proper columns on computer cards. The coded data collection sheet was tested by the writer and a volunteer on 20 non-contaminating case histories, then revised and reevaluated. The second edition was judged satisfactory for the research needs.

During this period, the Michigan Department of Mental Health provided a computer print-out of the ages, truncated names, and case numbers for the specified population. This record was found to be in error. Two research assistants checked the daily register and evolved a corrected list of admissions. The research assistants were then given 20 hours of instruction and data collection experience with non-contaminated case histories. When it was felt that an acceptable level of competence and understanding had been developed with the research assistants, the appropriate data were collected. Each data sheet was reviewed for accuracy by the writer shortly after collection and selected items were returned to the research assistants for rechecking. The primary purpose of checking items and returning data sheets was to condition the research assistants to initial accuracy. A secondary and important purpose of the constant

total checks was to insure the utmost accuracy in the data. One case, because of its special nature, was available only to the writer. All remaining cases were collected by the research assistants.

Procedures to Answer the Questions

The primary question asked of the data was: does a constellation of factors exist at, or near, admission of an emotionally disturbed child to a mental institution which has significance in determining the period of institutionalization? Additional questions were: what factors are significant in release during the first year, during the second year, during the third year or at some period after the third year of hospitalization?

Measures of central tendency and variability were developed where applicable for the initial description of the population. The chi-square (X^2) test of significance (Freeman, 1965, pp.215-227) was applied to the data on each factor. Additional collapsed data X^2 and supplemental data X^2 evaluations were carried out to amplify and clarify points of interest or doubt. Percentage data were added for clarification. These data are generally presented in both tabular and discussion form to aid in interpretation.

The measures of central tendency and variability describe the population selected for this study. X^2 tests the significance of the stated factors against duration of hospitalization. X^2 was applied because of the nominal

nature of much other data involved in the factors selected for analysis. Each X^2 is reported along with the level at which the observation demonstrates significance or lack of significance. The .10 level was considered as the extreme at which significance in this study could be acceptable for identifying a constellation of predictor variables. This level of significance was accepted for three reasons: a) the study is descriptive, b) the study is a preliminary effort, c) the study evaluates a small population. Some items beyond the .10 level could be considered indicative of a trend. The research population is too small to attempt broad generalizations from the data. The review of the literature demonstrated that this study is an early attempt to describe a population representing what must be considered a significant social, educational, and psychological problem in the United States today.

In the data analysis, the specified cutting point for duration of treatment provided inadequate categories for the application of X^2. The four-way split did not provide adequate cell frequencies. The categories were collapsed from a four-way split to a three-way split for analysis. The time spans for duration of hospitalization are 1 to 18 months, 19 to 36 months, and more than 37 months of treatment before release. Five items, age, academic achievement, I.Q., S.E.S., and number of prehospital treatment contacts were analyzed and will be reported for a 3x3, as well as the 3x2 frequency table. Some data, by their stated

categories, led to 3x3 and 3x4 splits. This is clarified as data are presented.

Analysis of the Data

The first items to be presented are the measures of central tendency and variation for the population. Second, the summary tables for X^2 are presented. Finally, each individual contingency table, where applicable, and the implications of the findings will be depicted. These are intended to display the overall population facts as well as the more important implications of the individual factors as analyzed against duration of hospitalization.

Measures of Central Tendency and Variation

Six factors, age, academic achievement, I.Q., S.E.S., number of prehospital treatment contacts, and duration of treatment were collected from data which are ordinal in nature. These factors with the mean and the standard deviation are summarized in relation to the normal probability curve (Pope & Scott, 1967, p.61). The distribution of these factors is important in understanding the nature of the group with which this project deals.

The remaining factors are nominal in nature. The categories are small. These factors can be summarized from visual inspection. This summarization is presented, where applicable, in the section covering X^2 and significance testing.

TABLE 1

Summary of Means and Standard Deviations for Ordinally Distributed Factors

Factor	$\bar{X}$	s
Age (in months)	162.52	28.08
Academic achievement	6.49	2.29
I.Q.	97.01	14.25
S.E.S.	32.99	24.17
Number of prehospital treatment contacts	23.68	36.32
Duration of treatment (in months)	26.53	16.79

Age. The mean age was 162.52 months or 13 years, 5½ months for all admissions during the data collection period. The standard deviation was 28.08 months or 2 years, 4 months for this same group. This demonstrates that 68%, or 120 of the 176, were between the ages of 11 years, 2 months and 15 years, 9 months. The remainder, or 56, were above and below these age groups. Only 16%, or 28 cases, were distributed between the ages of 7 years and 11 years, 2 months or a total of 50 months. The remaining 16% encompassed only 15 months from 15 years, 9 months to 17 years. This clearly indicates that children under 11 years of age were not treated in large numbers during the period of time covered by this report. The population is primarily an adolescent population. The data show that the early

adolescent is most often admitted to the Children's Unit at the Kalamazoo State Hospital.

Academic achievement. The mean academic achievement was 6.5 years of educational accomplishment upon admission. The standard deviation for this mean was 2.3. Sixty-eight percent of the cases evaluated, or 120 children, achieved a battery median score between 2 months in grade 4 and 8 months in grade 8. The mean of these scores is low in relation to normal age-grade expectation. Only 16% of the children were under 11 years and 2 months of age, while 50%, or 88 students, achieved below 5 months in grade 6. If a child is not 5 years of age by December first, he is not eligible in Michigan to start school during that school year. Normal progress with this policy would make 11 years of age mandatory by 4 months in grade 6. The mean age is plus 1 standard deviation unit in relation to normal age-grade expectation for academic achievement. This demonstrates serious academic retardation, as measured by a standardized achievement test at admission.

I.Q. The mean I.Q. was 97.01. The standard deviation was 14.25. Sixty-eight percent of the population comprising the research group have I.Q.'s, as tested by the Wechsler intelligence scales, that fall between 82.76 I.Q. points and 111.26 I.Q. points. This is a satisfactory distribution which closely approximates the normal I.Q. distribution.

A major question raised by these data is the presence and distribution of scores below 82.76. The assumption is that these scores are not valid representations of measurable ability and were so noted. The practice is not to confuse a dull child by intensive training or to clutter an academic program with slow learners. Children are screened and placed in one of four programs prior to admission. It is very doubtful that the innate ability of students on admission to the Children's Unit ranged much below 82.76. These 28 cases, or 16%, were malingerers or unable to express themselves due to emotional handicaps. This point raises questions for further study.

Some children of known limited ability were admitted early in the history of the Children's Unit. This practice changed as the program expanded.

S.E.S. The mean was 32.99. The standard deviation was 24.17. This distribution is positively skewed with a large standard deviation. There is room for 36.5% of the minus 2 standard deviation value before minus S.E.S. values are encountered. Duncan's Scale does not rate minus values. The S.E.S. of the families of children admitted to the Kalamazoo State Hospital and eventually transferred to the Children's Unit is low. The relatively broad standard deviation distribution indicates that there are sufficient extremes at the positive end of the rating scale to skew the distribution. There is not a tight cluster of S.E.S. classes. There is a large group of low S.E.S. families.

The distribution of this factor is as previously reported by Hollingshead and Redlich (1958).

Number of prehospital treatment contacts. The mean for prehospital treatment contacts is 23.68 with standard deviation of 36.32. Less than 1 minus deviation on the normal curve consumes more ordinal positions than are available for consumption. Slightly more than 12.64 points, or 33%, of the first minus deviation is not accounted for by the extreme ordinal position. Indications are that a large number of cases fall in the zero category of treatment contacts. The positively skewed distribution with a large standard deviation also presents a long tail that indicates a relatively large group of cases in the 99 plus prehospital treatment contacts. This distribution raises many questions about what happens to children before they are presented for treatment at a state hospital children's facility. The data do show that, prior to admission, many are never seen for treatment while others are seen many times.

Duration of hospital treatment. The mean for duration of treatment was 26.53 months or 2 years, 2½ months. The standard deviation was 16.79 months or about 1 year, 5 months. This distribution is also skewed positively. Forty-one percent of the minus two standard deviation distribution falls below 0. This indicates that many treatment cases are discharged from residential hospitalization in the early months of care and that a few stay for a long period of time. Sixty-eight percent, or 120, of the

treatment cases at the Children's Unit were released between the seventh month and forty-third month of treatment. Sixteen percent, or 28, treatment cases stayed some period of time longer than 3 years and 6 months. The mean for treatment was larger than expected. The large standard deviation of 16.79 points and the positively skewed distribution provides some satisfaction in suggesting that treatment time is not excessive for most children admitted to the Children's Unit of the Kalamazoo State Hospital.

It must be noted that these data were collected during a period when pressures for admissions were growing. The program was also expanding to include units for hyperkinetic, seriously disorganized children and non-academically oriented children. Consequently, the distribution includes a number of children who, because of the nature and seriousness of the presenting problems, would be treated in an area of Children's Services other than the Children's Unit building. As these areas become fully operational and generate data for comparison, it is assumed that they would present separate and distinct population distributions.

The previous factors were summarized by standard measures of central value and dispersion. These calculations present a clear picture of the mid-point and dispersion of scores for ordinal data.

The remaining factors are best summarized by visual inspection. This summarization proceeds in the following section with the X^2 analyses and significance testing.

TABLE 2

Summary of Three by Two Chi-square for Duration of Treatment Against Seventeen Admission Factors

Factors	X^2	Significance Level
1. Age	6.95	.05
2. Sex	2.36	.50
3. Type of admission	23.40	.001
4. Academic achievement	5.07	.10
5. Condition causing admission	5.22	.30
6. I.Q.	3.61	.20
7. S.E.S.	.03	.99
8. Type of home	1.60	.50
9. Fathers' stability	.54	.80
10. Mothers' stability	.23	.90
11. Presence of half siblings	1.77	.50
12. Presence of family psychiatric problems	6.79	.50
13. Brain damage	6.22	.05
14. Seizures	1.30	.70
15. Prehospital treatment contacts	4.19	.20
16. Ordinal position in sibling relationship	4.77	.50
17. Reported duration of problem behavior	5.91	.30

Chi-square

Table 2 indicates that four factors are significant to the .10 or better level and two factors could be indicative of a trend at the .20 level. The remaining factors must be discounted as significant predictor variables or possible trend indicators.

TABLE 3

Summary of Three by Three Chi-square for duration of Treatment Against Five Admission Factors

Factors	X^2	Significance Level
1. Age	10.45	.05
2. Academic achievement	6.80	.20
3. I.Q.	5.62	.30
4. S.E.S.	3.33	.70
5. Prehospital treatment contacts	10.54	.05

The primary question asked of the data was answered. A constellation of factors does exist that demonstrate significance in duration of treatment. The level of confidence in the relationship is high for one item. As additional items are added, the level of confidence is reduced considerably. Four of the 17 items that demonstrate predictive validity at least 90% of the time are obtained from data not generally subject to question. The highest X^2 significant at .001 level, type of admission, is a readily accessible and

confirmable unit of datum. The remaining items, age, academic achievement, and brain damage are concrete facts and developed from sources less subject to error. The two possible trend indicators are academic achievement and I.Q. which are accessible confirmable units of data.

Of the factors with less than chance incidence of error in prediction, only sex is a concrete observable item. The remaining items are subject to judgemental or informant error. The significant factors are those items we can rely on most for accuracy of data. The contingency tables for many of the factors should clarify points of question.

TABLE 4

Sample Chi-square Contingency Table

Factors for evaluation	Duration of treatment in months			
	a	b	c	Total
	e	f	g	Rows
	Total	Columns		N

Age. Table 5 depicts the contingency table for duration of treatment against age at admission. The X^2 equals 6.95 and is significant at the .05 level. Age at admission is therefore not independent of duration of treatment.

The sample was split on duration of treatment into three categories: one to 18 months, 19 to 36 months, and above 37 months for the categories on the contingency table. The proposed four-way split was discarded as inadequate for

computation of X^2 with the available data. The two-way split for age was 84 to 164 months, or 7 years to 13 years, 8 months and 164 to 205 months, or 13 years, 8 months to 17 years. The youngest group had 79 months for analysis. The oldest group had 40 months for analysis. Table 6 substitutes percentage figures for the subjects in the contingency table and demonstrates that many children are, in fact, adolescents by admission date. The youngest group constitutes 52.3% of the sample and the ages spread over a 79 month period. The oldest group is 47.7% of the sample and

TABLE 5

Duration of Treatment Against Age at Admission: Three by Two

Months	1-18	19-36	37+	Total
164-205	23	43	18	84
84-163	40	30	22	92
Total	63	73	40	N=176

$X^2=6.95$

the ages spread over a 40 month period. This table also shows that only 35.8% of the sample were released before one and one-half years had elapsed and 22.7% of the children stayed longer than three years. The largest group, 41.4%, were released between one and one-half and three years.

These same data were computed on a 3x3 contingency table with age splits at 11 years, 11 months and 14 years, 9 months. This X^2 is 10.45 with a significance level of.05.

Visual inspection of Table 7 shows that younger children appear to stay longer. Half the cases in residence 37 or more months are below 156 months of age and the lowest

TABLE 6

Percentage Distribution of Duration of Treatment Against Age at Admission: Three by Two

Months	1-18	19-36	37+	Total
164-205	13.1	24.4	10.2	47.7
84-163	22.7	17.1	12.5	52.3
Total	35.8	41.5	22.7	100%

percentage discharged in the 1 to 19 month group (7.4%) is the youngest age category. This fits with the stated position that younger children stay in hospitals longer. In all probability, the younger child has more disturbing presenting

TABLE 7

Duration of Treatment Against Age at Admission: Three by Three

Months	1-18	19-36	37+	Total
178-205	19	21	10	50
156-177	31	28	10	69
84-155	13	24	20	57
Total	63	73	40	N=176

$X^2=10.45$

problems to have been removed from the home between 84 and 155 months or before 12 years of age.

This relationship of age at admission, against duration of treatment, has not been plotted. It appears reasonable to suspect that the relationship is not linear from the data available. Further evaluation is necessary to prove a curvilinear relationship exists. Age at admission is a significant predictor variable. Further evaluation is necessary to determine how this variable operates in relation to duration of treatment and other predictor variables identified in this study.

TABLE 8

Percentage Distribution of Duration of Treatment Age at Admission: Three by Three

Months	1-18	19-36	37+	Total
178-205	10.8	11.9	5.6	28.3
156-177	17.6	15.9	5.6	39.1
84-55	7.4	13.7	11.5	32.6
Totals	35.8	41.5	22.7	100%

Sex. Sex is not a statistically significant factor in duration of treatment in a children's unit. Table 9 is the contingency table for sex. One would normally expect girls to be older and, consequently, more disturbed at treatment inception. As a result, they should stay longer, but this was not the case. Another unusual observation is number and

percentage of males and females in the population. Ninety-nine or 56.25% of the group were male and 77 or 43.75% of the group were female. National statistic indicate three times as many boys as girls are treated for psychiatric problems (Patients in state and county hospitals, 1969). The historical data presented in Chapter I of this study parallels the research data. The Kalamazoo State Hospital has apparently regularly admitted more young female patients than national incidence figures indicate should be admitted. This implication should be evaluated in depth.

The Children's Unit has bed space for a two to one ratio or 66 2/3% males and 33 1/3% females. A X^2 test of this population based on bed space available is 12.1 with

TABLE 9

Duration of Treatment Against Sex Distribution

Months	1-18	19-36	37+	Total
Male	34	39	26	99
Female	29	34	14	77
Total	63	73	40	N=176

$X^2=236$

d.f.1. This X^2 is significant at the .01 level. More girls and less boys appear in this population than would be expected by chance. Perhaps this indicates that girls move through the treatment situation considerably faster than boys even though this fact does not appear significant on

the contingency table in the categories presented.

Type of admission. Type of admission was a factor with a .001 level of significance for the X^2 computed. The X^2 was 23.40. The contingency table is presented in Table 10. A visual inspection of the cells of this table show a directional relationship between voluntary admissions and court order admissions to the Children's Unit at the Kalamazoo State Hospital. Voluntary admissions have the

TABLE 10

Duration of Treatment Against Type of Admission

Months	1-18	19-36	37+	Total
Voluntary	46	34	10	90
Court Order	17	39	30	86
Total	63	73	40	N=176

$X^2=23.40$

highest number of releases in the lowest time spans. These releases increase to the lowest releases in the highest time span for length of stay. Table 11 depicts this relationship on a population percentage basis.

It is regarded as better for a child to enter psychiatric hospital treatment on a voluntary basis. This situation affords a better, more cooperative treatment contract with the patient and the patient's family than the force treatment situation which is inherent in a court order commitment. Voluntary admission indicates that someone in

close association with the child accepts the need for help. The parent or guardian is not being forced by community authority figures to seek psychiatric counsel and guidance.

TABLE 11

Percentage Distribution of Duration of Treatment Against Types of Admissions

Months	1-18	19-36	37+	Total
Voluntary admissions	26.1	19.3	5.7	51.1
Court order admissions	9.7	22.2	17.0	48.9
Total	35.8	41.5	22.7	100%

An increasing number of voluntary admissions was the result of a Department of Mental Health policy change during the 1964-1965 fiscal year. A frequency count by fiscal years demonstrates an inverse relationship of court order admissions against voluntary admissions for the data collection period, July, 1961 to July, 1967. The move toward voluntary admission was a good and statistically significant policy change. It was related to reducing length of stay in the hospital children's unit setting.

Academic achievement. Academic achievement has an X^2 of 5.07 which is significant at the .10. Table 12 displays the contingency table distribution for academic achievement against duration of/treatment. Table 13 shows a percentage distribution for the population from the contingency table.

Academic achievement was computed on the battery median score for the Stanford Achievement Test. This standardized

achievement test was revised and made more difficult during the data collection period. In addition, each form of the test has independent norms and the scores are not directly

TABLE 12

Duration of Treatment Against Academic Achievement

Months	1-18	19-36	37+	Total
Grade 6.6 and above	17	30	9	56
Grade 1 to 6.5	46	43	31	120
Total	63	73	40	N=176

$X^2=5.07$

comparable to each other form of the test. These revisions are not considered to be an important issue. The problem is to gain a general estimate of relative achievement to

TABLE 13

Percentage Distribution of Duration of Treatment Against Academic Achievement

Months	1-18	19-36	37+	Total
Grade 6.6 and above	9.7	17.1	5.1	31.9
Grade 1 to 6.5	26.1	24.4	17.6	68.1
Total	35.8	41.5	22.7	100%

insert with other factors which form a constellation of factors significant in determining the periods of institutionalization. Academic achievement is one of the factors

for inclusion in a constellation of factors.

A standardized test score for grade level estimate is better than a personal estimate of functional ability at admission to a treatment institution. A more refined approach, employing a broad range of sub-test scores might be more highly significant when considering academic

TABLE 14

Totals and Percentages of Age Group Distribution and Academic Achievement Group Distribution in the Study

Age			
Age in months	Age in years	Total Numbers	Percentage Figures
178-205	14-10 to 17	50	28.4
156-177	12 to 14-9	69	39.2
84-155	7 to 11-11	57	32.4
		N=176	100%
Academic achievement			
Grade 7.3 and up		45	25.6
Grade 6.1 - 7.2		74	42.0
Grade 1 - 6.0		57	32.4
		N=176	100%

achievement. The applicability of any generalized approach to employing academic achievement reduced the practical aspects by increasing the technical nature of data collection and evaluation.

In Table 13, academic achievement indicates a skewed distribution for the population in relation to age. Only 31.9% of the group tested above 6 years and 5 months in the sixth grade, while 47.7% of the population was above 163 months or 13 years, 8 months of age. There is an apparent discrepancy in age-grade expectation.

The totals for a 3x3 contingency table in percentage form for age and academic achievement demonstrate this fact more clearly. The total age groupings approximate the school age classifications for elementary school, junior high school, and beyond junior high school. The achievement groups are poorly distributed with 74.4% below 3 months progress in the 7th grade while 67.6% are above 11 years, 11 months of age. Academic retardation at admission is demonstrated.

Condition causing admission. Condition causing admission is not significant at the .30 level. Any relationship would have to be reevaluated in different ways and by different criteria before reasonable conclusion could be drawn. The judgement of the difference between hyperkinetic behavior and acting out-aggressive behavior is questionable. The information was rated by a sub-professional from inferences in social case history. The real value would be in a professional rating by the social worker collecting the data and this is not generally done.

The contingency table, Table 15, shows the large number of cases in the acting-out-aggressive category. Fifty-nine

and seven-tenths percent of all cases can be classed as behavior problems. By collapsing the categories, 69.3% of the population were very active children and 30.7% were

TABLE 15

Duration of Treatment Against Condition Causing Admission

Months	1-18	19-36	37+	Total
Acting out-aggressive	37	44	24	105
Depressive-withdrawal	18	26	10	54
Hyperkinetic	8	3	6	17
Total	63	73	40	N=176

$X^2=5.22$

quiet children in displaying their problems. These collapsed categories yield an X^2 of 4.70 which is significant at the .10. Children who are less overtly demonstrative in displaying problems do not stay in residential treatment as long as those that are highly visible because of their overt emotional problems. This relationship deserves more intensive evaluation.

Intelligence. Evaluation of intelligence generated an X^2 of 3.61 which may indicate a trend at the .20 level. Intelligence, as measured by the Wechsler Intelligence Scales, is a factor in determining length of stay. Dull children are hospitalized longer. Table 16 shows the numerical difference and Table 17 depicts the percentage difference in I.Q. distribution for the population in this

study. More than half the group, 92 or 52.3%, did not reach an I.Q. of 98. The measures of central tendency and variation also show the facts related to lower I.Q. for the

TABLE 16

Duration of Treatment Against Intelligence Test Score Level

Months	1-18	19-36	37+	Total
I.Q. 98+	31	39	14	84
I.Q. to 97	32	34	26	92
Total	63	73	40	N=176

$X^2=3.61$

population. It can be stated that children presented for admission to the Kalamazoo State Hospital, and eventually admitted to the children's unit building, test lower than would be expected in a normally distributed population. It is also noted that the distribution of I.Q. scores very

TABLE 17

Percentage Distribution of Duration of Treatment Against Intelligence Test Score Level

Months	1-18	19-36	37+	Total
I.Q. 98+	17.6	22.1	7.9	47.6
I.Q. to 97	18.2	19.4	14.8	52.4
Total	35.8	41.5	22.7	100%

nearly approximated the normal distribution for I.Q. scores.

Socioeconomic status (S.E.S.). S.E.S. as evaluated was not significant. This is evident from Table 2. The categories of S.E.S. were divided at 34 from a 1 to 100 scale to maintain adequate cell frequency for X^2. Even with this unequal split, 113 cases, or 64.2%, fall into the category depicting the lowest S.E.S. classes. These figures support Holingshead and Redlich's (1958, p.309) assertion that the types of treatment a psychiatric casualty receives is based on economics. Our less affluent citizens must rely on state hospital psychiatric services for residential care of their children. It is possible, but not inferable according to these data, that S.E.S. dictates whether residential care will be employed extensively for many classes of our citizens. Possibly higher S.E.S. classes rely on out-patient services and lower S.E.S. classes rely on state residential psychiatric facilities for psychiatric care and service for their children. It is also possible that less overt psychiatric type illnesses are demonstrated in higher S.E.S. classifications.

Type of home. Type of home refers to male or female dominance of the decision making process. It was stated that who made the decision was not as important as that decisions were made. The factor of who makes the decisions is not significant. It is not significant, in considering duration of treatment, whether the adult male or adult female member of the household is rated as dominant in the family relationships.

For the total group evaluated, 106 cases, or 60.2% of the cases, maternalistic control was rated as dominant. The data as presented prevent identification of those cases where the mother is raising the family alone. It is possible to speculate that since many cases are from the lower socioeconomic status groups and many more than half the families are dominated by women, most of the female dominated families are one-parent families.

Parental instability (loss of parental support). Parental instability encompasses the mothers' stable relationship with the home, the fathers' stable relationship with the home, and the presence of half siblings in the family. It was suspected that disruptions in the relationship with a stable home situation would increase the duration of treatment for an institutionalized child.

The fathers' and mothers' stable relationship with the home did not generate data adaptable to a 3x5 contingency table. The reduced numbers in collapsed categories are presented in a 3x2 table for X^2 significance testing against duration of treatment. Table 18 depicts the distribution of the fathers' absence from the home by number for 180 days or more. Table 19 presents the same information for the mother.

The data as collected refer to all forms of absences from the home. The time span employed was 180 or more days out of the home before the absence was recorded. These data included death which precludes any return, but is

traumatic and seriously disruptive in a child's life and in a home situation.

TABLE 18

Tabulation of Fathers' Absences from the Home for 180 Days or more

Number of absences	0	1	2	3 or more	unknown
Cases	88	35	15	6	32

N=176

TABLE 19

Tabulation of Mothers' Absences from the Home for 180 Days or more

Number of absences	0	1	2	3 or more	unknown
Cases	145	14	2	0	17

N=176

Eighty-two percent of the mothers and 50% of the fathers had not been absent from the home for the specified period. Fathers appear to leave home and return more than mothers. Mothers, when they leave, appear to leave permanently. A very large percentage of fathers were absent for long periods of time.

Table 18 presents contingency table information for the fathers' absence from the home. Table 19 presents the same information for the mothers in a 3x2 table. These two items lack significance in duration of treatment. Table 2 indicated that these items could not be used in predicting

duration of treatment. There was no significance or relationship between a lost parental identification figure and duration of treatment.

TABLE 20

Duration of Treatment Against Fathers' Consistent Presence in the Home or Absence for 180 Days or more

Months	1-18	19-36	37+	Total
Father out	29	39	20	88
Father not out	34	34	20	88
Total	63	73	40	N=176

$X^2=.54$

TABLE 21

Duration of Treatment Against Mothers' Consistent Presence in the Home or Absence for 180 Days or more

Months	1-18	19-36	37+	Total
Mother out	11	12	8	31
Mother not out	52	61	32	145
Total	63	73	40	N=176

$X^2=.23$

One possible explanation for the lack of significance in these items is that the disruptions in a home with a child with psychiatric problems is so great that the presence or absence of a parental identification figure is only one factor in a large constellation of disruptive factors.

It is also possible that a home could stabilize somewhat with the loss of a parent who is adding to the disruption. It is also very reasonable to assume that many families presenting children for admission to a psychiatric hospital are multi-problem families. The mentally ill child is a symptom of the problems these families face. These factors in their present form raise many questions and provide few answers.

The factor dealing with half-siblings in the family constellation is not significant. These data are presented in Table 2. The X^2 contingency table listed 52 subjects as having half-siblings. This number is 29.5% of the total cases.

Although many disruptions in family stability are evident in these data, none of those disruptions are significant in relation to duration of treatment. The hospitalized child, in recovering from his illness, is reacting to factors not identified by these items related to family stability.

Presence of family psychiatric problems. Presence of family psychiatric problems, item number 12 of Table 2, along with the previous 5 factors, did not demonstrate significance on the X^2 test. The categories were collapsed to include only mother, father, and other family members. The totals of 18 mothers, 16 fathers, and 37 other family members with psychiatric problems appear low.

Diagnosed psychiatric type problems are only a small portion of the mental illness iceberg. Action for Mental Health (1961), the final report of the Joint Commission for Mental Illness and Health, attempts to outline the extent of an extremely broad national mental health problem. This report states, "The outstanding characteristics of mental illness as a public health problem are its staggering size, ..." (p.xxiii). The possibility that 10% of the mothers and 10.2% of the fathers have diagnosed psychiatric problems appears reasonable to expect in relation to available data. Many more parents of hospitalized children probably present undiagnosed psychiatric type problems. These data are important, but incomplete for any valid conclusions. The relationship of parental problems to children's problems needs further clarification.

Brain damage. Brain damage is significant in determining the length of hospitalization at the .05 level. The X^2 is 6.22. Table 22 presents the contingency arrangement for data on brain damage. Twenty-six cases, or 14.8% of the group, demonstrate confirmed brain damage. These patients stayed in the hospital longer on the average than the non-damaged group. An organically damaged child needs more care, support, and guidance in a sheltered environment to learn to manage his problems and exist in society.

TABLE 22

Duration of Treatment Against the Presence or Absence of Diagnosed Brain Damage

Months	1-18	19-36	37+	Total
Yes	7	8	11	26
No	56	65	29	150
Total	63	73	40	N=176

$X^2=6.22$

Seizures. Seizures, item number 14 of Table 2, did not have a significant relationship to length of stay in a hospital, as was expected. It was not expected that the total number of cases of confirmed seizures would reach 17, or 9.6%, of the population. Frequently, the case for seizures is emotional and not medical. The medically uninformed explain away aberrant behavior as spells or seizures. Upon close examination, few reported cases of seizures are confirmed. Some of the cases discovered could have been undiscovered before hospitalization. These data were not available for this study.

Prehospital treatment contacts. Prehospital treatment contacts may indicate a trend at the .20 level from a X^2 of 4.19. It was suspected that prehospital treatment contacts would be an indication of duration of illness prior to confinement in a closed treatment setting. Such reasoning led to consideration of the position that the longer a

child was exposed to treatment prior to admission, the longer he would have to be treated before he was released from a closed setting. The data appear to indicate that this could be true. More data and further study are needed for confirmation.

Table 23 presents the contingency table for prehospital treatment contacts. It now appears that it was an error not to consider the 71 patients with no prehospital treatment contacts as a separate category. Only 39% of the

TABLE 23

Duration of Treatment Against the Number of Prehospital Treatment Contacts

Months	1-18	19-36	37+	Total
25 to 100	13	26	14	53
0 to 25	50	47	26	123
Total	63	73	40	N=176

$X^2=4.19$

cases had more than 25 prehospital treatment contacts prior to admission and 15% of the total are cases with 99 or more prehospital treatment contacts. While 71% of the cases had from 0 to 25 prehospital treatment contacts, 40% of this total had no prehospital treatment contacts. These data indicate that treatment for emotionally disturbed children by traditional mental health treatment resources has not been generally available for children in southwestern Michigan. Treatment services are expanding. The rapidly

changing situation in mental health treatment would render facts developed valid only for the period of data collection.

Ordinal position in sibling relationship. Ordinal position is postulated to have some bearing on the mental health status of a child. This factor was not significant. Contingency Table 24 demonstrates that 51 cases, or 29% of the cases evaluated, placed the patient as the first child in the family. This could have occurred by adoption or natural birth. Twenty-three percent of the cases, or 41

TABLE 24

Duration of Treatment Against Ordinal Position in Sibling Relationship with Percentage Totals Added

Months	1-18	19-36	37+	Total	Percentage
First child	14	23	14	51	29%
Second child	20	14	7	41	23%
Third or later child	29	36	19	84	48%
Total	63	73	40	N=176	100%

$X^2=4.77$

children, were the second child in the family. The remaining 48%, or a total of 84 cases, were third or later in sibling relationship.

By collapsing categories to first and other than the first child, the X^2 is 3.15 which could indicate a trend at the .20 level. A first born child might remain hospitalized longer. This direction parallels much recent research on

the significance of birth order in many areas of human endeavor.

Reported duration of problem behavior. The duration of problem behavior is reported by the informant at admission. It is subject to human error in reporting. Some informants would skew the data to meet their own emotional needs. Agencies responding to information requests have been known to grossly disagree with informants in reporting "facts" in a treatment case. The X^2 is computed as 5.91 which is not significant. Contingency Table 25 presents the case distributions for the categories considered with margin percentage figures for the totals.

TABLE 25

Duration of Treatment Against Duration of Problem Behavior with Percentage Totals Added

Months	1-18	19-36	37+	Total	Percentage
Of very recent origin	38	38	20	96	54.5%
Of several years duration	21	25	11	57	32.1%
Life long	4	10	9	23	13.4%
Total	63	73	40	N=176	100%

$X^2=5.91$

The margin percentage figures show that slightly more than half the cases were considered to be of very recent origin. Collapsed categories of recent origin and longer than of recent origin produced an X^2 of 1.38 which is less than the initial analysis.

Duration of problem behavior is very difficult to collect with any degree of confidence in the accuracy of the data. The data as collected did not produce significant results when analyzed. This suggests that this item be dropped from a descriptive study.

Summary

The measures of central tendency and variability present some interesting information. The population is an adolescent population with a normally distributed I.Q. The subjects, upon admission to the Kalamazoo State Hospital, demonstrate academic retardation on an achievement test. The majority of the subjects come from low S.E.S. classification. A large number, 71, received no prehospital treatment while 27 achieved 99 or more prehospital treatment contacts. The mean duration of treatment was two years, two and one-half months; somewhat longer than expected. Several of the distributions were skewed positively by the extremes. The information presented by these measures is interesting and stimulating.

A constellation of factors was found significant in relation to duration of treatment. Age, type of admission, academic achievement, condition causing admission, I.Q., the number of prehospital treatment contacts, and duration of problem behavior are significant in determining duration of treatment. None of the items tested presented a clear cut indication of the length of treatment needed by specified category. Younger patients stay longer. Patients who

do poorly on an I.Q. test stay longer. Hyperactive agressive patients stay longer. Patients with organic brain damage stay longer. These factors have the highest significance levels and indicate a direction for further study.

Chapter V

Summary and Conclusions

The subject of this report has been a review of the history of children's problems as they relate to the Kalamazoo State Hospital 1859-1970 and a description of the Children's Unit population in relation to duration of treatment 1961-1967.

Summary of Research Objectives

The research objective was to develop an historical perspective of children's problems as they relate to the Kalamazoo State Hospital and to statistically describe the Children's Unit population according to selected factors as those factors relate to duration of treatment. The basic research question was: does a constellation of factors exist that is significant in determining duration of treatment? Additional questions were directed toward specific time spans for duration of treatment.

Summary of Methodology

The population under investigation included all patients ages 7 to 17 admitted to the Kalamazoo State Hospital and eventually transferred to the Children's Unit for treatment from July 1, 1961 to June 30, 1967. The sample size was 198. Twenty-two patients were still in residence and were dropped from the data analysis. The

research N was 176. Available data were historical in nature. The factors selected were isolated because of 1) their identification in the literature, 2) their availability in the case history, and 3) their relevance.

The factors for analysis were: age, sex, type of admission, academic achievement, condition causing admission, intelligence, socioeconomic status, type of home, parental stability, the presence of psychiatric problems in the family, central nervous system damage, seizures, prehospital treatment contacts, ordinal position in sibling relationship, and duration of problem behavior. Parental stability refers to indices of disruption in the home and includes the factor of presence of half siblings which is assumed to indicate a disruption.

The data were collected from case histories which are taken on all patients at, or near, admission. The analyses of the data involved the mean and standard deviation where applicable and the chi-square significance testing of the factors against duration of treatment. Additional data, including collapsed and supplemental data X^2, were developed where applicable to amplify the presentation.

Summary of Research Findings

The measures of central tendency and variability show that a) the population is primarily an adolescent population, b) the population demonstrates a normally distributed I.Q., c) the subjects demonstrate academic retardation on an

achievement test, d) most of the subjects come from low S.E.S. homes, e) prehospital treatment contact varied in the extremes, and f) duration of treatment was between 26 and 27 months. Duration of treatment, S.E.S., and prehospital treatment contacts were skewed positively.

A constellation of factors was found to be significant in relation to duration of treatment. Age, type of admission, academic achievement, and condition causing admission were significant in determining duration of treatment. None of the items tested presented a clear cut indication of the length of treatment by specified time category. Younger patients stay longer. Patients who do poorly on an academic achievement test stay longer. Patients with organic brain damage stay longer. The longer a patient has exhibited his problems, the longer he remains hospitalized. These factors have the highest level of significance. They indicate a direction for further investigation. I.Q. test performance and prehospital treatment might indicate a trend. These two items need more extensive evaluation with a larger group.

Discussion of Findings

Conclusions

This study is about children at the Kalamazoo State Hospital. The population described was patients ages 7 to 17 transferred to the Children's Unit building for treatment from July 1, 1961 to June 30, 1967. Another hospitalized

population of children equal in number to the research group existed during this period of time. Those children not transferred to the Children's Unit building were not evaluated. Programs have now evolved to service all segments of the childhood population. Data currently developing will allow a complete portrayal of the Children's Services population. These data are not yet available. It is essential to understand the scope, nature, and extent of the problem of the hospitalized child for the total population to be explored.

The population studied is primarily an adolescent population. Most children's problems are exacerbated by adolescence and the transition to a broader community and school relationship. Children are more sheltered and protected prior to adolescence.

Sex distribution was surprising. Far more girls moved through the Children's Unit treatment facility than were expected. This pattern follows the identical trend of sex distribution detailed in the historical section of this text. It does not fit the national admission patterns for children of three male admissions to one female admission.

Type of admission proved to be a very significant factor as was anticipated. Parental identification figures were found to be more tractable and cooperative in a voluntary treatment situation. This is important in determining duration of treatment.

It was suspected that the students were academically retarded at admission and this proved to be true. Academic retardation is equal to minus one standard deviation on the age distribution scale and indicates serious academic retardation upon admission. Emotional conflict has apparently caused this retardation. It is also known that emotional conflict and the attendant peer and adult group conflicts can block the ability to learn and retain content material. This impaired functioning would preclude adequate achievement test performance.

Conditions causing admission were not significant in relation to duration of treatment as tested. Collapsed data of active, aggressive children against quiet, withdrawn children, showed that those children who actively displayed psychiatric type problems have longer hospitalization.

Intelligence was found to be normally distributed. This poses questions about minus two and three standard deviation groups. The dull child is not "screened" as amenable to intensive academic training while in psychiatric treatment. The majority of low I.Q. subjects are suspected to be intelligent, but non-functional or malingers at the time of testing. These would be so noted on the report form.

The S.E.S. of the families of Children's Unit patients is low as anticipated from Hollingshead and Redlich's (1958) work. State hospitals are not generally used for the children of the affluent except as a last resort. The Kalamazoo State Hospital is no exception.

An expected result was that the "type of home" in relation to the family decision-making-process was not significant in determining duration of treatment. The number of maternally dominated homes was high, definitely relating to the fact that 50% of the fathers had left the home one or more times for a long period of time.

Factors related to family stability, mothers' stable relationship with the home, fathers' stable relationship with the home, the presence of half siblings in the home, and psychiatric problems in the family did not produce data that were significant in relation to duration of treatment. It was expected that items related to family stability would be significant. These items should be evaluated further in different ways.

As expected, the diagnosis of brain damage was significant in relation to duration of treatment. Seizures may indicate organic malfunction; however, diagnosed seizures were not significant in relation to duration of treatment. Formerly the epileptic was legislated against and this finding appears to indicate a positive social change in relation to seizure sufferers. Seizures are medically more controllable and consequently may be more socially acceptable. Seizures and brain damage are concomitant factors, although it may be impossible to demonstrate brain damage with seizures. Brain damage with or without seizures is a serious and significant problem in relation to duration of treatment. These data suggest that the already implemented

plan of initial segregation and stabilization of the brain damaged child was a sound administrative decision at the Kalamazoo State Hospital.

The number of prehospital treatment contacts experienced prior to admission was not significant in relation to duration of treatment. This factor is a function of age and duration of problem behavior. It also reflects, to a degree, the availability of treatment resources in the area served. Resources for non-residential treatment of children are not readily accessible in southwest Michigan. The Kalamazoo State Hospital is planning to help remedy this situation with expansion of outpatient and day-care service.

Ordinal position in sibling relationship was not significant in relation to duration of treatment. If a child must be confined for psychiatric type problems, his responses to treatment reflect factors other than birth order.

The longer a child displays problems before hospitalization, the greater the period of hospitalization will be. The data do not agree with this axiomatic statement, yet a trend may be indicated. It is best to deal with children's problems as they arise. Postponement of action is wasteful and inefficient. However, lack of resources and services for treatment is an important factor in extending duration of problem behavior prior to hospitalization. Improved mental health public relations would be a decided asset in providing early psychiatric intervention in the developing emotional problems of children.

Implications

Many children are in trouble (Joint Commission, 1969). The numerical increase in residential populations of children in state and county hospitals is great. Without proper care, a high percentage of these children will experience lifetime institutional care (Joint Commission, 1969, p.4). This report has outlined an evolving psychiatric care program at the Kalamazoo State Hospital. A major implication of this study is that an organizational scheme and classification system exists whereby the movement of children through a state psychiatric hospital may be expedited. However, this inference needs further clarification and verification through experimentation.

Mental health workers, in a hospital setting, might be well advised to structure several programs to meet the contingencies of psychiatric treatment needs available from admission data. Appropriate patient behaviors are undoubtably contaminated by inappropriate group placement.

All psychiatrically hospitalized children cannot be efficiently or effectively treated or educated in the same facility with the same program. A state hospital has limited power of selection for its resident population. It must, to be effective, create a varied, flexible mode of delivering service to those children judged in need of service. These types of explorations coupled with intensive and extensive evaluation would provide a direction for programs that must be established to meet the treatment

needs of that seriously disturbed segment of our childhood population. Treffert (1968) has created a model, but descriptions and evaluations are lacking.

The Kalamazoo State Hospital has evolved an organizational scheme and classification system whereby children are screened and assigned to an appropriate treatment unit before admission. These units for academically oriented and capable children, hyperkinetic, and frequently brain damaged children and non-academically oriented children maintain a flexible treatment philosophy. Each unit contains appropriate educational staff and facilities. The treatment teams are flexible, mobile, and coordinated in their treatment efforts. The children's service is administered by a single administrative officer. These factors make treatment of emotionally disturbed children challenging, productive, and pleasant for the staff. These factors also appear to be producing a highly efficient staff.

It is essential that this initial research effort be pursued. Studies are needed, after a suitable period of time has elapsed to describe and evaluate all children admitted to the hospital. These projects are being discussed.

It is important, and also difficult, to conduct a follow-up study of released patients. It is known that very few children are rehospitalized as children. Limited community social agency or penal agency requests for information are received on released children. This leads to the assumption that released children are at least marginally

successful in managing themselves and their interpersonal relationships. More information is needed.

Sociological studies are in progress to determine how the educational and ancillary service treatment programs affect the children during their hospitalization. These studies will also reflect on the total treatment program, staff relationship, and the children's services productivity. An additional project to be completed in the near future is an attempt to develop a predictive regression equation that will predict an approximate release period from admission data.

The above projects stem directly from this initial research effort although external influence was exerted by Title I of the Elementary and Secondary Education Act. This research effort has also indicated - in its initial implications - that the Kalamazoo State Hospital has additional avenues to explore: in collecting case history data, in expediting admissions, in counseling families, and in evaluating children to expedite treatment time. The task is great, yet a highly motivated staff is ready for meeting their part of the "Challenge For The 1970's".

Limitations

One limitation of this study is that it is limited to the Kalamazoo State Hospital, Kalamazoo, Michigan. An agency of this nature, with more than 111 years of history, has unique features. The limited population is drawn from a specified geographical area and the conclusions cannot

be generalized.

Another limitation is that this study is an "ex post facto" study. It is most evident to this author that it would be wise to plan studies and organize procedures prior to development of data. This procedure is enviable, yet not always possible.

A serious limitation of this study is that the total population of children institutionalized was not described. The programs, beyond the Children's Unit program, were in such a fragmented state of development during the period evaluated that no effective data could be developed. This additional step is being planned for future presentation.

A paucity of studies for comparison was a limitation, yet makes this study valuable. This condition also places limitation on evaluation of the conclusions. Other descriptions are needed.

Recommendations

1) This type of study should be replicated in many geographical areas. Too little is known about the composition of children's populations in relation to care programs in state hospitals.

2) A more sophisticated study which lends itself to prediction of duration of treatment should be devised. It could be an extension of description.

3) Further research should be devised which will focus on those factors which are related to and that could stimulate rapid patient movement in a state hospital situation.

APPENDIX A

Data Collection Sheet[2]

[2]This is an abbreviated adapted data collection sheet. Additional data were collected for other uses at the time this study was conducted.

APPENDIX A

Data Collection Sheet

Children at the Kalamazoo State Hospital
July 1, 1961 to June 30, 1967

Code Key Deck 1, Column 80
0 has a value
Blank indicates no value

Data Collector_____

Patient's Name_____

Case Number_____

Dictated By (Social Worker)_____

Item Number	Item		Column Number
1. Identification	001-999		1-2-3 _____
2. Date of birth	Month		4-5 _____
	Day		6-7 _____
	Year		8-9 _____
3. Age at admission	Years		10-11 _____
	Months		12-13 _____
4. Sex	Male	-1	
	Female	-2	14 _____
5. Date of admission	Month		15-16 _____
	Day		17-18 _____
	Year		19-20 _____
6. Type of admission	Voluntary	-1	
	Court order Temporary	-2	
	Court order Diagnostic	-3	
	Court order Permanent	-4	21-22 _____
7. Date of discharge	Month		23-24 _____
	Day		25-26 _____
	Year		27-28 _____

Item Number	Item	Column Number
8. Type of release or transfer (List transfer)	Direct discharge-1 Convalescent status -2 Escape -3 Against medical advice -4 Other state hospital -5 Home for mentally retarded -6 Department of Social Welfare-7 Outside Michigan-8 Other -9	29_____
9. Time in the hospital	Months	30-31-32_____
10. Achievement test Battery median		33-34-35_____
11. Condition causing admission	Acting-out aggressive -1 Depressed withdrawal -2 Hyperkinetic -3	36_____
12. Intelligence test (Near admission)	Test: Wechsler Intelligence Scale for children -1 Wechsler Intelligence Scale for adults -2 Stanford-Binet -3	37_____
	Scale: Verbal I.Q. Performance I.Q. Full Scale I.Q.	38-39-40_____ 41-42-43_____ 44-45-46_____
	Date (List month and year)_____	

Item	Column Number
13. Socioeconomic status (Duncan's Scale)	47-48_____
If major residence is with father, indicate father's occupation: _____	
If no father is present, indicate occupation of nearest adult with whom child was residing at admission: _____	
14. Type of home (Judgement rating from case history data)	
Paternalistic -1 Maternalistic -2	49_____
15. Siblings and/or half-siblings	
a. Number of siblings younger 0-None	50_____
b. Number of siblings older 9-9 or more	51_____
c. Number of half-siblings younger	52_____
d. Number of half-siblings older	53_____
e. This child is a twin Identical -1 Fraternal -2 Inconclusive data -3	54_____
16. Reported duration of problem behavior prior to admission	
Years	55-56_____
Months	57-58

Item		Column Number
17. Reported duration does not translate to years and months. It appears to be:		
Of very recent origin	-1	
Of several years duration	-2	
Life-long	-3	59_____
18. Status of the father at patient's admission:		
Living with the family	-1	
Separated, living in family home	-2	
Separated, not living in home	-3	
Divorced, living in family home	-4	
Divorced, not living in home	-5	
Deceased	-6	
Institutionalized, prison	-7	
Institutionalized, mental health unit	-8	60_____
19. Has father ever been separated from family for a period in excess of 180 calendar days? (Military service, hospitalization, etc.)		
Yes	-1	
No	-2	61_____
20. How many times was the father separated for the specified period?		
1 time	-1	
9 or more times	-2	62_____

Item		Column Number
21. Status of the mother at patient's admission:		
Living with the family	-1	
Separated, living in family home	-2	
Separated, not living in home	-3	
Divorced, living in family home	-4	
Divorced, not living in home	-5	
Deceased	-6	
Institutionalized, prison	-7	
Institutionalized, mental health unit	-8	63_____
22. Has mother ever been separated from family for a period in excess of 180 calendar days? (Hospitalization, prison, desertion, etc.)		
Yes	-1	
No	-2	64_____
23. How many times was the mother separated for the specified period?		
0	-0	
1 time	-1	
9 or more times	-2	65_____

Item		Column Number
24. Is there a history of psychiatric illness in the family (including alcoholism)?		
Yes	-1	
No	-2	66_____
25. Psychiatric illness diagnosed in: (Include alcoholism)		
Mother	-0	
Father	-1	
Father and mother	-2	
Mother's blood relatives	-3	
Father's blood relatives	-4	
Brother	-5	
Sister	-6	
Brothers	-7	
Sisters	-8	
Brother(s) and sister(s)	-9	
No data	Blank	67_____

Item		Column Number
26. Psychiatric illness reported, but not diagnosed in:		
Mother	-0	
Father	-1	
Father and mother	-2	
Mother's blood relatives	-3	
Father's blood relatives	-4	
Brother	-5	
Sister	-6	
Brothers	-7	
Sisters	-8	
Brother(s) and sister(s)	-9	
No data	Blank	68_____
27. Status of the subject: evidence of C.N.S. damage, diagnosed by one specialist and confirmed by at least one other specialist (i.e., medical doctor, psychologist, electro-encelopholographic report)		
Yes	-1	
No	-2	69_____

Item		Column Number
28. Suspected C.N.S. damage reported by:		
No data	-0	
Medical doctor	-1	
Psychologist	-2	
E.E.G. record	-3	
Two of the above	-4	
All three of the above	-5	
Other	-6	70_____
29. Evidence of seizures diagnosed by one expert (medical doctor)		
Yes	-1	
No	-2	71_____
30. Suspected seizures reported by:		
Mother	-1	
Other family member	-2	
Medical record	-3	72_____
31. Who was child living with at admission?		
Father and mother	-1	
Stepfather and mother	-2	
Father and stepmother	-3	
Mother only (exclude siblings)	-4	
Father only (exclude siblings)	-5	
Grandparents	-6	
Aunts or uncles	-7	
Siblings	-8	
Foster home (non-family)	-9	
Other	-0	73_____

Item		Column Number
32. Child was raised by:		
Mother	-1	
Father	-2	
Grandmother	-3	
Housekeeper	-4	
Siblings	-5	
Aunt	-6	
Foster mother	-7	
Other	-8	74_____
33. Child's age at removal from mother's care for periods in excess of 6 months:		
Not removed from mother's care	-00	
1 Year of age	-01	
5 Years of age	-05	
10 Years of age	-10	
15 Years of age	-15	75-76_____
34. Number of prehospital treatment contacts:		
None	-0	
One	-1	
99 or more	-99	77-78_____
Column 79 Card 1		79 1
Column 80 Deck 1		80 1

APPENDIX B

Description and Frequency Distributions of Data on 22 Excluded Patients Who Remained in Residence on January 1, 1970

APPENDIX B

Description and Frequency Distributions of Data on 22 Excluded Patients Who Remained in Residence on January 1, 1970

Twenty-two cases were excluded from analysis by virtue of their continuing residence in the hospital on January 1, 1970. These children present distinctly unique characteristics on variables analyzed in relation to the research population. This segment of the population is younger and contains more males. It displays a higher percentage of brain damage and does not perform as well on an academic achievement test or an intelligence test as does the research group. A fairly large number are court committed patients.

The age range of the excluded group upon admission was 7 to 15 years. The mean age was 9.45 years. The excluded group of children is much younger than the research group.

The excluded group contained 90% males or 20 males and 2 females. This distribution differs widely from the research group.

Type of admission shows a lower percentage of court commitments among the excluded group at 31.8%. The research group showed 49.9% court commitments. These data are deceiving. A frequency count of type of admission over the six year research period demonstrated an inverse relationship of court commitments as compared to year of

admission (See Appendix C).

Medically certified brain damage existed in one-third of the excluded patients. This was 18.8% higher than the figure found for the research group.

In academic achievement testing, 4 patients did not attempt or complete a test, 4 patients did not score a battery median of grade one, and 11 additional patients scored below grade four. One of the remaining three scored ninth grade level. This was very low in comparison to the research group achievement test scores. The data were skewed positively by non-performers.

The mean I.Q. score for the excluded group was 86.5. This was nearly 11 points lower than the mean I.Q. score of 97.01 for the research group.

Two additional factors, although not significant in the research data, appeared important in the excluded group distribution. Far fewer fathers and a greater number of mothers were out of the home 180 days or more. Only 22.7% of the fathers were out of the home for the specified period, while 55% of the mothers were out of the home for the specified period. In the research group, 50% of the fathers and 17.6% of the mothers were out of the home for the specified time. These figures differed from the basic research group and could be significant in determining length of residence. Duration of treatment was also longer than for the research group. The mean duration of treatment for the research group was 26.53 months. The mean

duration of treatment for those patients who remained in residence was 50.4 months to January 1, 1970. This duration of treatment figure would, in all likelihood, be more than double the research group duration of treatment before their release.

The excluded group of subjects were important in attempting to understand the population of a state hospital children's unit. These patients remained in residence because the nature of their problems precluded their successful reinsertion into society at that time. Some may have to await adulthood before release.

The research predictor variables of age, academic achievement, type of admission, and brain damage all appeared to be present in a negative manner in the excluded group. A possible trend indicator, I.Q., also was very suspicious in the excluded group. Could the research predictor variables be related to the reason that those 22 patients remained in residence and were excluded from the study?

A brief analysis of the excluded population established interesting and exciting possibilities for further research. It was anticipated that this project would represent the first of a series of needed inquiries.

TABLE 1B

Patients Excluded from Analysis
by Virtue of Residence on
January 1, 1970

Admission year	Admission month 1	2	3	4	5	6	7	8	9	10	11	12	Total
1962		1									1		2
1963						1						1	2
1964													0
1965	1					1	2		2				6
1966	1	1	2			2	1			1			8
1967			1	1		2							4
Total	2	2	3	1	0	6	3	0	2	1	1	1	22

X=June, 1965

TABLE 2B

Distribution of Age at Admission of
Patients Excluded from Analysis

Age	7	8	9	10	11	12	13	14	15	Total
Frequency	4	5	3	5	1	2	1	0	1	22

X=9.45

TABLE 3B

Frequency Distribution of Sex Designations, Type of Admission, Identification of Brain Damage and Identification of Seizures

Sex		Type of admission		Brain damage		Seizures	
Male	Female	Voluntary	Court Order	Yes	No	Yes	No
20	2	15	7	6	18	2	20

TABLE 4B

Distribution of Duration of Problem Behavior and Condition Causing Admission

Duration of problem behavior		
Of recent duration	Of several years duration	Life long
10	6	6

Condition causing admission		
Acting-out aggressive	Depressed withdrawn	Hyperkinetic
13	2	7

TABLE 5B

Distribution of I.Q. and S.E.S.

I.Q.	70-84	85-99	100-114	115-133
Frequency	10	7	4	1

X=86.5

S.E.S.	0-24	25-49	50-74	75-99
Frequency	15	5	1	1

X=24.59

TABLE 6B

Battery Median of Academic Achievement at Admission

Grade score	0	1	2	3	4	5	6	7	8	9	No test
Frequency	4	4	3	4	1	1	0	0	0	1	4

X=2.2

APPENDIX C

Frequency Distributions not Available in the Text of Predictor Variables in Relation to Duration of Treatments

APPENDIX C

Frequency Distributions not Available in the Text of Predictor Variables in Relation to Duration of Treatments

TABLE 1C

Distribution of Age in Relation to Duration of Treatment

Duration of treatment	Age										Total
	7	8	9	10	11	12	13	14	15	16	
1-18 Months			2	5	2	4	14	15	8	13	63
19-36 Months		3	4	3	3	11	9	15	18	7	73
37+ Months	2	3	3	5	1	6	3	7	6	4	40
Total	2	6	9	13	6	21	26	37	32	24	N=176

TABLE 2C

Distribution of I.Q. Scores in
Relation to Duration of Treatment

	I.Q. range					
Duration of treatment	60-84	85-99	100-114	115-129	Above 129	Total
1-18 Months	10	26	17	10	0	63
19-36 Months	15	23	26	8	1	73
37+ Months	9	19	11	1	0	40
Total	34	68	54	19	1	N=176

TABLE 3C

Academic Achievement Scores in
Relation to Duration of Treatment

	Achievement test battery median												
Duration of treatment	1	2	3	4	5	6	7	8	9	10	11	12	Total
1-18 Months	3	0	2	2	11	28	6	5	2	3	1	0	63
19-36 Months	2	2	3	9	4	29	7	6	0	5	5	1	73
37+ Months	1	3	3	7	4	16	1	3	1	1	0	0	40
Total	6	5	8	18	19	73	14	14	3	9	6	1	N=176

TABLE 4C

Ordinal Position in Sibling Relationship
in Relation to Duration of Treatment

	Ordinal position									
Duration of treatment	1	2	3	4	5	6	7	8	9	Total
1-18 Months	14	20	12	12	3	0	1	0	1	63
19-36 Months	23	14	9	12	7	4	4	0	0	73
37+ Months	14	7	9	6	2	0	2	0	0	40
Total	51	41	30	30	12	4	7	0	1	N=176

TABLE 5C

Type of Admission in Relation to
Duration of Treatment

Duration of treatment	Voluntary order	Court orders			All court orders	Total
		Temporary	Emergency	Permanent		
1-18 Months	46	0	2	15	17	63
19-36 Months	34	0	14	25	39	73
37+ Months	10	1	4	25	30	40
Total	90	1	20	65	86	N=176
Total	90				86	N=176

TABLE 6C

Number of Prehospital Treatment Contacts
Recorded in the Case History

Duration of treatment	Number of prehospital treatment contacts					
	0	0-24	25-49	50-74	75-99	99	Total
1-18 Months	31	50	5	2	6	6	63
19-36 Months	28	47	4	5	17	15	73
37+ Months	12	26	6	2	6	5	40
Total	71	123	15	9	29	26	N=176

TABLE 7C

Socioeconomic Status in Relation to Duration of Treatment

Duration of treatment	Duncan's scale S.E.S. groupings 1-24	25-49	50-74	75-99	Total
1-18 Months	35	14	9	5	63
19-36 Months	39	13	16	5	73
37+ Months	24	7	4	5	40
Total	98	34	29	15	N=176

TABLE 8C

Presence of Diagnosed Psychiatric-Type
Problems in the Child's Mother, Father,
Mother and Father, and Other Family Members

Duration of treatment	Presence of diagnosed psychiatric problems				Total
	Mother	Father	Mother and father	Other family members	
1-18 Months	10	7	0	9	26
19-36 Months	6	6	0	16	28
37+ Months	1	3	2	9	15
Total	17	16	2	34	69

LIST OF REFERENCES

LIST OF REFERENCES

Aichhorn, A. Wayward youth. New York: Viking Press, 1935.

Alt, H. Residential treatment of the disturbed child: Basic principals in planning and design of programs and facilities. New York: International University Press, 1961.

Annual report of the Kalamazoo State Hospital to the state hospital commission for the fiscal year ending June 30, 1938. Kalamazoo, Michigan: Kalamazoo State Hospital, 1938.

Annual report of the Kalamazoo State Hospital, Kalamazoo, Michigan 1949-1950. Kalamazoo: Kalamazoo State Hospital, 1950.

Annual report of the Kalamazoo State Hospital, Kalamazoo, Michigan 1953-1954. Kalamazoo: Kalamazoo State Hospital, 1954.

Bettelheim, B. Love is not enough. Glencoe, Ill.: The Free Press, 1950.

Biennial report of the board of trustees of the Michigan asylum for the insane for the years of 1859-1860. Lansing: Hosmer and Kerr, Printers to the state, 1861.

Biennial report of the board of trustees of the Michigan asylum for the insane for the years of 1863-1864. Lansing: John H. Kerr, Printers to the state, 1864.

Bowlby, J. Maternal health and mental health. World Health Organization, 1951, No.2.

Chronbach, L. J. Essentials of psychological testing. New York: Harper Brothers, 1949.

Craft, S. O. History of the Kalamazoo State Hospital. Kalamazoo: Graphic Arts, Adjunctive Therapies, Kalamazoo State Hospital, 1964.

Cruickshank, W. M. A teaching method for hyperkinetic and brain injured children. Syracuse, New York: Syracuse University Press, 1961.

Edwards, A. Statistical methods in the behavioral science. New York: Holt, Rinehart and Winston, 1954.

Farnsworth, G. L. Utah State Hospital youth program: Part II, Description of the patients. Unpublished masters thesis, University of Utah, 1967.

Faux, E. J. & Farley, W. O. An evaluation of a hospital youth center. Hospital and Community Psychiatry, 1968, 19, 244-245.

Fish, B. & Shapiro, T. A descriptive typology of children's psychiatric disorders II: A behavioral classification. In R. L. Jenkins & J. O. Cole (Eds.), Diagnostic classification in child psychiatry. Washington, D. C.: American Psychiatric Association, Research Report, No. 18, 1964.

Fletcher, R. C., Schroeder, D., Bryan, G., & Waldman, H. Report on student group project: Inpatient care of children in a state mental hospital. Ann Arbor: The University of Michigan, School of Social Work, 1959.

Fletcher, R. C., Schroeder, D., Marshall, A. W., & Marckwardt, J. Children hospitalized for mental illness: Part I: A study of the number of pre-hospital contacts of children committed to two state mental institutions. Ann Arbor: The University of Michigan, School of Social Work, May, 1960.

Freeman, L. C. Elementary applied statistics: For students in behavioral science. New York: John Wiley & Sons, 1965.

Goldfarb, W. The effects of early institutional care on adolescent personality. Journal of Exceptional Education, 1943, 12, 106-129.

Hollingshead, A. B. & Redlich, F. C. Social class and mental illness. New York: John Wiley & Sons, 1958.

Jenkins, R. L. & Gruel, L. Predictive factors in early release. Mental Hospitals, 1959, 10 (9), 11-14.

Joint Commission on Mental Illness and Health, Action for mental health. New York: Basic Books, 1961.

Joint Commission on Mental Health of Children, Inc., Digest of crises in child mental health: Challenge for the 1970's. Washington, D. C.: Joint Commission on Mental Health of Children, 1969.

Kornberg, L. A class for disturbed children: A case study and its meaning for education. New York: Bureau of Publication, Teachers College, Columbia University, 1955.

Levey, D. M. Primary affect hunger. American Journal of Psychiatry, 1937, 94, 643-652.

Noble, A. I., Medical Superintendent, "Report to the board of trustees". Kalamazoo, Michigan: May 8, 1906.

O'Leary, J. T. & Landy, W. M. Electroencephalography and electromyography. In A. B. Baker (Ed.), Clinical neurology, (Rev. ed.) New York: Hoeber-Harper, 1962. 4 vols.

Packard, V. The sexual wilderness. New York: David McKay, 1968.

Pearson, P. H. The relationship between selected social and demographic characteristics of hospitalized mental patients and outcome of hospitalization. (Doctoral dissertation, The American University) Ann Arbor, Michigan: University Microfilms, 1964, No. 64-12807.

Pope, B. & Scott, W. H. Psychological diagnosis in clinical practice with applications in medicine, law, education, nursing and social work. New York: Oxford University Press, 1967.

Rapaport, D., Gill, M. M., & Schafer, R. Diagnostic psychological testing. New York: International University Press, 1968.

Redl, F. & Wineman, D. The aggressive child. Glencoe, Ill.: The Free Press, 1957.

Reiss, A. J., Jr. Occupations and social status. (Chapters VI, VII, & Appendix B by Duncan, O. D.) Glencoe, Ill.: The Free Press, 1961.

Report of the trustees of the Michigan asylums 1853-54. Lansing: Michigan Legislature, No. 10, 1855.

Report of the board of trustees of the Michigan asylum for the insane for the years 1857-58. Lansing: Hosmer and Kerr, Printers to the state, 1859.

Report of the board of trustees of the Michigan asylum for the insane for the years of 1859 and 1860. Lansing: Hosmer and Kerr, Printers to the state, 1861.

Report of the board of trustees of the Michigan asylum for the insane for the years 1865-66. Lansing: John H. Kerr, Printer to the state, 1866.

Report of the board of trustees of the Michigan asylum for the insane for the year of 1867. Lansing: John H. Kerr, Printer to the state, 1867.

Report of the board of trustees of the Michigan asylum for the insane for the years of 1867-1868. Lansing: John H. Kerr, Printer to the state, 1868.

Report of the board of trustees of the Michigan asylum for the insane for the years 1869-1870. Lansing: W. S. George, Printers to the State, 1871.

Report of the board of trustees of the Michigan asylum for the insane for the years 1875-1876. Lansing: W. S. George, State Printers and Binders, 1877.

Report of the board of trustees of the Michigan asylum for the insane for the year of 1880. Lansing: W. S. George, State Printers and Binders, 1880.

Report of the board of trustees of the Michigan asylum for the insane for the years of 1899-1900. Lansing: Wynkoop, Hallenbeck, Crawford, State Printers, 1900.

Report of the board of trustees of the Michigan asylum for the insane at Kalamazoo for the biennial period ending June 30, 1908. Lansing: Wynkoop, Hallenbeck, Crawford, State Printers, 1909.

Report of the board of trustees of the Kalamazoo State Hospital at Kalamazoo for the biennial period ending June 30, 1912. Lansing: Wynkoop, Hallenbeck, Crawford, State Printers, 1912.

Report of the board of trustees of the Kalamazoo State Hospital at Kalamazoo for the biennial period ending June 30, 1914. Lansing: Wynkoop, Hallenbeck, Crawford, State Printers, 1914.

Report of the board of trustees of the Kalamazoo State Hospital at Kalamazoo for the biennial period ending June 30, 1916. Lansing: Wynkoop, Hallenbeck, Crawford, State Printers, 1916.

Ribble, M. A. The rights of infants: Early psychological needs and their satisfactions. New York: Columbia University Press, 1943.

Sargent, H. D., Horwitz, L., Wallerstein, R. S., & Appelbaum, A. Predictions in psychotherapy research: A method for the transformation of clinical judgement into testable hypotheses. Psychological Issues, 1968, 6, (1, Whole No. 21).

Siegel, S. Non-parametric statistics for the behavioral science. New York: McGraw-Hill Book Co., 1956.

Sonntag, A. Utah State Hospital youth program: Part IX, family functioning. Unpublished masters thesis, University of Utah, 1967.

Spitz, R. The role of ecological factors in emotional development of infancy. Child Development, 1949, 20, 145-156.

Swanson, H. S. Predicting length of stay in a state mental hospital of patients diagnosed as schizophrenic. (Doctoral dissertation, State College of Washington) Ann Arbor, Mich.: University Microfilms, 1959, No. 59-1665.

Taylor, F. M. Utah State Hospital youth program: Part I, History. Unpublished masters thesis, University of Utah, 1967.

Treffert, D. A. Administering a residential program. Hospital and Community Psychiatry, 1968, 19, 237-240.

United States Public Health Service. Patients in state and county mental hospitals 1967. Washington, D. C.: United States Government Printing Office, Publication No. 1921, 1969.

Untitled, bound volume of reports and historical information, typed. Bound at Kalamazoo State Hospital, not dated.