

RESULTS OF PROLONGED REHABILITATION OF CEREBRAL PALSY IN SINGAPORE

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SYNOPSIS

254 cases (65.4% males and 34.6% females) between 17 and 30 years are collected and analysed. 48.4% were diplegics or quadriplegics, and the rest were hemiplegics or athetoids. 85% had spent about 11 years in the school, and after leaving school 84.7% could walk with or without aids, 89.4% could take care of themselves with or without help, and 42.5% could find employment.

INTRODUCTION

Cerebral Palsy is the result of brain damage occurring before birth, at birth, or before the child reaches the age of three. Though its main clinical manifestation is confined to the neuromuscular system, it often causes dysfunction of other systems leading to mental retardation, sensory disorders, convulsions, eye and ear disabilities and behaviour disorders. Rehabilitation of Cerebral Palsy is therefore not an easy task in view of the multiplicity of physical and mental disabilities present in most of the affected children.

In Singapore, almost every child born is closely followed up by the neonatologist or the paediatrician, and all cases of suspected brain damage are referred to a special Cerebral Palsy clinic at the Singapore General Hospital for confirmation of diagnosis and registration. From this register we were able to obtain about 1500 confirmed cases of Cerebral Palsy by the end of 1982.

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Cerebral Palsy children in Singapore are treated early at two centres — one at the Singapore General Hospital, and the other at the school run by the Spastic Children's Association at Gilstead Road, which was established in 1957. Once they reach the age of five or six years, they are sent either to the normal schools for education if they have minimal mental and physical disabilities, or to the school for spastic children where further physical therapy and vocational training are provided until they reach the age of sixteen when they are formally discharged or absorbed into the school's vocational workshop for further training.

The purpose of this paper is to analyse the results and effect of the long years of rehabilitation these children received at these centres.

MATERIAL AND METHOD

Information on all spastics between the ages of seventeen

and thirty were derived from the case notes kept in the school. This age group was selected as it was felt that on reaching the age of seventeen, the children would have had about eleven years of rehabilitation and education in the school, and should be helping at home or working if they have been rehabilitated successfully. Out of the 325 cases registered in this age group only 254 could be traced.

RESULTS

Sex and Age Group (Table I)

Of the 254, 65.4% were males and 34.6% females. 40.5% were between the ages of 17 and 20, 48.4% were between 21 and 25, and 37.8% fell within the age range of 26 and 30.

TABLE I: - AGE & SEX DISTRIBUTION

AGE GROUP	MALE	FEMALE	TOTAL	PERCENTAGE
17 — 20	62	41	103	40.5
21 — 25	65	31	96	37.8
26 — 30	39	16	55	21.7

Family Size (Number of Siblings) (Table II)

53.9% of the total had four or less number of siblings each, and this contradicted my previous survey of 120 cases five years ago in which more than 60% of the cases had more than five siblings each.

TABLE II: - FAMILY SIZE (NO. OF SIBLINGS)

SIBLINGS	NO.	PERCENTAGE
1 — 4	137	53.9
5 — 7	91	35.8
8 — 10	23	9.1
Above 10	3	1.2
TOTAL	254	100

Clinical Types (Table III)

There were 40 (15.8%) hemiplegics, 123 (48.4%) diplegics or quadriplegics, and 91 (35.8%) athetoids. This shows that in this series the most common were the diplegics or quadriplegics, and the least common were the hemiplegics.

102 (40.2%) had various degrees of speech involvement, but only three were deaf and mute.

Education

About 85% had attended the school for spastics, and the other 15% only came for physical therapy. Four of these school children were later transferred to normal schools, two to the Singapore Association for Retarded Children

(SARC), and one to the Red Cross Home as they were too disabled mentally or physically.

Therapy Received (Table IV)

Whilst in the school, 146 (57.5%) had received physical therapy, 151 (59.4%) had occupational therapy, 102 (40.2%) needed speech therapy, and 138 (54.3%) received vocational training. These therapies were incorporated into the child's school programme and, depending on the severity of the child's disabilities, frequency of therapy varied.

Mobility Profile (Table V)

The end result of the therapy shows that 163 (64.2%) were able to walk independently though most of them had an abnormal gait; 52 (20.5%) could walk with aids, appliances or minimal help; 8 (3.1%) were wheelchair bound; and 31 (12.2%) were totally dependent and could not walk at all.

Self-Care Independence (ADL) (Table VI)

After these long years of rehabilitation, 175 (68.9%) were independent in self-care activities, or activities of daily living (ADL), like eating, dressing, bathing, and other activities for personal hygiene; 52 (20.5%) needed help for such activities, and 27 (10.6%) were totally dependent on others to do such activities for them.

Employment Status (Table VII)

Out of the 254 cases surveyed, only 108 (42.5%) were gainfully employed. 47 worked in the sheltered workshops, 29 were absorbed into the various factories, and one was a qualified accountant.

There were various reasons for being unemployed

amongst the remaining 146 spastics. The reasons given were as follows:-

too disabled

poor motivation
transport problems
lack of suitable jobs or
still schooling.

TABLE III: - TYPES OF CEREBRAL PALSY

TYPE	MALE	FEMALE	TOTAL	PERCENTAGE
HEMIPLEGICS	26	14	40	15.8
DIPLEGICS/ QUADRIPLEGIC	78	45	123	48.4
ATHETOIDS	62	29	91	35.8

TABLE IV: - THERAPY & TRAINING

THERAPY/TRAINING	MALE	FEMALE	TOTAL	PERCENTAGE
PHYSICAL THERAPY	94	52	146	57.5
OCCUPATIONAL THERAPY	93	58	151	59.4
SPEECH THERAPY	60	42	102	40.2
VOCATIONAL TRAINING	98	40	138	54.3

TABLE V: - MOBILITY PROFILE

LEVEL OF INDEPENDENCE	MALE	FEMALE	TOTAL	PERCENTAGE
INDEPENDENT IN AMBULATION	104	59	163	64.2
INDEPENDENT IN AMBULATION WITH AIDS/APPLIANCES/HELP	38	14	52	20.5
INDEPENDENT IN WHEELCHAIR	5	3	8	3.1
TOTALLY INDEPENDENT	19	12	31	12.2

TABLE VI: - SELF-CARE INDEPENDENCE (A.D.L.)

LEVEL OF INDEPENDENCE	MALE	FEMALE	TOTAL	PERCENTAGE
TOTALLY INDEPENDENT	117	58	175	68.9
PARTIALLY INDEPENDENT	32	20	52	20.5
TOTALLY DEPENDENT	17	10	27	10.6

TABLE VII: -TYPES OF EMPLOYMENT

TYPE OF JOB	NUMBER	PERCENTAGE
FACTORY WORKERS	29	11.4
LIFT ATTENDANTS	15	5.9
OFFICE ATTENDANTS	5	2.0
PETROL KIOSK ATTENDANTS	4	1.6
WORKSHOP INSTRUCTORS	3	1.2
CAR PARK ATTENDANTS	2	0.8
TELEPHONE OPERATORS	2	0.8
ACCOUNTANTS	1	0.4
SHELTERED WORKSHOP	47	18.5
TOTAL	108	42.5

EUDCATION

1370 + 780 = 215
 School for Deaf (2)
 N. School (4)
 SARC (2)
 Red Cross Home (1)

1. Blind (10)
 2. MD (10)
 3. Deaf (20 + 10)

17 years — 325 registered
 Total Cerebral Palsy registered 1500

DISCUSSION AND CONCLUSION

This study shows that children affected by Cerebral Palsy are not doomed to be classified as totally helpless and useless beings. Contrary to this belief, there is actually a ray of hope if these children are treated early in a proper centre like this. This is very true for the mild and moderate cases. For the very disabled, there is also some hope as family members are encouraged to take an active role in the rehabilitation programme so that they can manage the children at home. In this study 84.7% were able to ambulate with or without aids, appliances or some help, and 89.4% could take care of themselves independently, or with some help after leaving this school. 42.5% were able to find jobs in the sheltered workshop, factories and offices.

In conclusion, I would strongly advise that to achieve success and to be comprehensive in the rehabilitation of the Cerebral Palsied, a good vocational training cum placement department should be added as an indispensable part of a set-up like ours. Alternatively, the Associa-

tion can join with other Associations such as the Society for Aid to the Paralysed in forming a vocational training centre. This would reduce the capital investment and recurrent costs, and at the same time, allow our spastic children to integrate with those having other types of disabilities.

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