

A SURVEY OF SCHOOL CHILDREN FOR PARTIAL SIGHTEDNESS

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In 1965 a small survey of school children from selected schools was carried out. The results however were not satisfactory largely because of a breakdown in the referral system of these children to the Department, and from the lessons learnt from that particular survey, another one was planned in 1968 and this time a much larger number of children from six schools were examined. Several meetings with officials from the Ministry of Education and School Health Authorities were held and finally it was agreed to begin the project in May and June 1968. The aims of this survey were mainly:—

- (a) To estimate the incidence of partially sighted children in the school going population of Singapore.
- (b) To analyse the causes of serious visual disability in school children.
- (c) To report to the authorities concerned as to the size of the problem and to recommend what steps should be taken to alleviate it.

MATERIAL AND METHODS

Teachers from six primary integrated schools were briefed as to how to screen the children in their schools. Snellens' Test Types were used and only those children who had vision worse than 6/18 even with corrective lenses, were to be kept aside for the survey and were to be sent up to the Ophthalmic Department, Outram Road General Hospital for further examination.

At the Ophthalmic Department, children who were referred on this basis, were seen by the Refractionist as well as by one of the Ophthalmic Surgeons. The survey started in mid-May 1968 and the whole project was completed by October 1968.

RESULTS

A total of 15,913 school children from six schools were screened by the teachers. Of these, 556 children with vision poorer than 6/18 in

their better eye were referred to the Ophthalmic Department. This is only 3.56% of the children screened. However, only 393 showed up for further examination. This was a percentage of 70.66%. If due allowance and correction are made, then it can be assumed that these 393 children were seen from approximately 11,400 school children. Of these 393 children seen by the Ophthalmic Department, 47 were found to have some pathological condition which prevented one eye or both eyes from further improvement better than 6/24. This gives a figure of 11.96%.

If the visual criterion for a partially sighted child is taken as less than 6/18, then only seven cases were found to be so from all those seen (i.e. from the 393 cases from 11,400 children, i.e. a percentage of 1.78%). Therefore, actually, the percentage incidence of truly partially sighted children in Singapore schools can be estimated as 0.0614% (7:11,400).

The number of school children in Singapore amount to roughly half a million. If a projection is taken of the figure thus far obtained, the number of partially sighted school children likely to be seen would amount to about 300 children.

AN ANALYSIS OF THE CAUSES OF DEFECTIVE VISION IN SCHOOL CHILDREN

A. 47 cases of defective vision

(a) Corneal Opacity	7 (all acquired)			
(b) Cataract Congenital	9			
(c) Uveitis	3			
(d) Nystagmus Congenital	1			
(e) Optic Atrophy Congenital	1			
(f) Macular Degeneration Congenital	1			
(g) Optic Disc (Congenital Changes)	<table border="0" style="display: inline-table; vertical-align: middle;"> <tr> <td rowspan="2" style="font-size: 2em; vertical-align: middle;">}</td> <td>2—inferior conus</td> </tr> <tr> <td>2—aplasia</td> </tr> </table>	}	2—inferior conus	2—aplasia
}	2—inferior conus			
	2—aplasia			

- (h) Amblyopia with Squint 4
- (i) Refractive Error 16
 - i. Myopia 11
 - ii. Astigmatism 4
 - iii. Hypermetropia 1
- (j) Phthisis (Acquired) 1

More important causes are:

- Refractive Error 35%
- Cataract Congenital 20%
- Squint with Amblyopia 8%

Of these 40 cases could be improved in one or both eyes to vision better than 6/24.

B. 7 cases of true partial sightedness (4 females, 3 males)

- (a) Congenital Cataract 3
- (b) Aplasic Optic Disc 1
- (c) Nystagmus (Congenital) 1
- (d) Uveitis 1
- (e) High Hypermetropia 1

Of these, 42% were due to Congenital Cataracts. Although a high percentage of those referred were refractive errors, only one case of refractive error was so handicapped as to be placed in the Partially Sighted group. A majority of those partially sighted were those with congenital cataracts. The ultimate prognosis of these children, as is the experience of most ophthalmologists, is not good, although some gratifying results can be obtained in a small minority with surgery, and or with lenses.

Squint and amblyopia are associated problems which however, fortunately, are not serious ones in Singapore. Amblyopia is preventable in many cases and of course, should be checked before the school going age.

DISCUSSION AND RECOMMENDATIONS

From the survey above it would appear that the incidence of the partially sighted children is not as great as expected. This confirms the impression that the ophthalmologists in the Ophthalmic Department of the Outram Road General Hospital have gained over the years.

In the education of partially sighted children, the philosophy and objectives guiding those concerned should be the same as for normal sighted children and that is to regard these children as seeing children who must be educated

and prepared for lives in a seeing society. Other than the obvious physical limitations, partially sighted children differ from each other as normal children do in their abilities, interests, home environment and personalities. All these aspects should be considered in sound educational planning.

There are perhaps three types of educational plans in common use for partially sighted children:—

- (a) The cooperative plan: i.e. the children are placed in special classes, leaving these classes from time to time to join their normally sighted colleagues. These special classrooms would be equipped with large print books, tape recorder, bulletins, type-writers, maps and globes with little detail and various types of recorded material.
- (b) The resource room or remedial classroom: This is more advantageous in that the partially sighted child is part of a normal school and leaves the classroom for this resource room only for further activities requiring extended use of his eyes and for coaching. It is also a more economical way of educating the partially sighted child particularly if the group is small (as in Singapore).
- (c) Itinerant teaching programme: This is certainly not advised nor applicable in Singapore which is only 221 sq. miles in area.

It would seem therefore that the best approach to the problem of educating the partially sighted children in Singapore is to create resource rooms in 5-6 centres strategically situated in the island. These centres should be in schools that are at present existing. Groups of 50-60 children could be regrouped into these schools which are nearest their homes to make it more convenient for them. They could then be taken out in small groups into the resource rooms at various time of the day. In this way there would be no need to duplicate equipment several times over and the number of teachers involved would be much less.

Another point that we would like to recommend is what a visual acuity examination of all school children be conducted whilst in their first year in primary school. In this way cases of poor sight due to refractive errors, cataract, squint (and amblyopia) and other causes which are remediable can be picked up early and sent

for treatment. Primary school teachers can be very easily briefed on visual acuity tests. Again it would make easier the task of finding annually new cases of truly partially sighted children or those likely to become partially sighted so that a careful watch could be kept over them.

Some 3.56% of all the children screened had to be referred to the Ophthalmic Department for further tests and exclusion. The immediate problem now is the screening and testing of all school children, a no mean problem and this should be tackled without much delay.
