

# Registration of New Blindness in Singapore for 1985 – 1995

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## ABSTRACT

**Data on causes of blindness in Singapore from blind registration have been gathered yearly since 1950, when blind registration in Singapore was first started. The blind register is maintained by the Singapore Association of the Visually Handicapped (SAVH), based on reports from practising ophthalmologists in the government institutions. Ophthalmologists in the private sector (who also attend to the bulk of patients coming from overseas) do not register their blind patients.**

**During the past four decades (from 1950 till 1990), analyses of our causes of blindness have been published by various local authors, quoting data from the blind register at the SAVH. These reports showed that our pattern of blindness reflected predictably the trend already observed in the developed countries, viz a shift from infections to congenital and age-related causes. This trend is in keeping with the impact of affluence on the economic and social environment, resulting in better health services and the prevention of avoidable diseases.**

**Updated but hitherto unpublished new blind registrations in Singapore for 1985 – 1995 confirm the now established trend. As of now (in 1995), retinal diseases is the ranking cause (57.6%), followed by congenital and developmental disorders (14.7%), optic atrophy (9.3%), glaucoma (8.6%) and minor causes (1%).**

**Keywords: blindness, registration of blindness, classification**

## INTRODUCTION

Lim<sup>(1)</sup> made the first local publication on registration of blindness in Singapore from 1950 – 1972. This first report gave a detailed account on yearly prevalence, rate per 100,000 population, comparison of blind population and prevalence with other countries, blind persons by age at onset, blindness by age at registration, classification by aetiology and site, together with an analysis of changing causes shown quadrennially.

Cheong and Khoo<sup>(2)</sup> reported on new registrations for three decades, 1953 – 1962, 1963 – 1972, and 1973 – 1984. This unpublished report, submitted to the Singapore Association of the Visually Handicapped (SAVH), and subsequently presented at the prevention of blindness seminar of the International Agency for the Prevention of Blindness

held in Singapore on 19 – 20 October 1985, contained an overlap from the previous report<sup>(1)</sup> till year 1972. The authors also pointed to an under-registration by a factor of four, from an extrapolation study conducted at the Eye Department of the Singapore General Hospital in 1982.

Later, Low et al<sup>(3)</sup> reviewed the major causes of blindness, in order of frequency, in a different time frame of four decades, from 1950 – 1960, 1961 – 1970, 1971 – 1980, and 1981 – 1989. This report was prepared for the 26th International Congress of Ophthalmology, which was held in Singapore in 1990. This report covered an overlap from the two previous reports (1 and 2). The authors highlighted the impact of affluence on the major causes of blindness spanning the four decades but gave no analysis of the causes.

There has since been no other published reports on causes of blindness in Singapore.

## New registrations (1985 – 1995)

Hitherto unpublished data on new blindness in Singapore from 1985 – 1995 is now presented. The data is obtained from the same source as for the other previous reports (1, 2 and 3) viz from the SAVH, where the blind register is maintained. This present report does not slot-in any time frame in particular. It is an update to show and place on record our figures for the past 10 to 11 years, with an analysis of the current major causes and the changing trend in the country. This trend confirms the observation already seen in the developed countries.

## Analysis

Table I shows our new registrations for 1985 – 1995. The total number of registered blind in 1995 is 1,248 persons for a mid-year population in 1995 of 2.99 million, giving a rate of 41.7 per 100,000 population.

Even allowing for an under-registration by a factor of four<sup>(2)</sup>, this rate is still one of the lowest in the world. Because of the very small number of blind persons registered, the rate may not be statistically valid.

## Ranking causes

Table II shows the ranking causes of blindness from 1985 – 1995. Retinal blindness (57.6%) comprised more than half the causes, followed by congenital and developmental causes (14.7%), optic atrophy (9.3%), and glaucoma (8.6%). The remaining causes are relatively insignificant at less than 1% – 2%.

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**Table I – New registration of blindness (1985 – 1995) Singapore, (Lim KH, 1996) (obtained from Annual Reports, Singapore Association of the Visually Handicapped)**

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	Total
Retinal	27	74	86	99	58	56	80	67	54	58	61	720
Congenital	19	18	26	17	11	16	15	22	20	8	12	184
Optic atrophy	10	18	9	7	18	8	7	8	9	13	9	116
Glaucoma	8	8	10	15	1	10	11	12	14	7	12	108
Corneal disease	1	2	4	2	1	2	3	1	2	1	2	21
Uveal	1	2	1	3	1	3	0	0				11
Trauma	0	0	2	3	1	3	0	2				11
Cataract	2	10	0	0	0	2	1	1				16
Others	5	2	4	4	–	5	1	3	9	12	16	61
<b>Total</b>	<b>73</b>	<b>134</b>	<b>142</b>	<b>150</b>	<b>91</b>	<b>105</b>	<b>118</b>	<b>116</b>	<b>108</b>	<b>99</b>	<b>112</b>	<b>1,248</b>

**Table II – Ranking causes of blindness (1985 – 1995) Singapore (Lim KH, 1996)**

Causes	No. of cases	%
Retinal	720	57.6
Congenital	184	14.7
Optic atrophy	116	9.3
Glaucoma	108	8.6
Cataract	16	1.3
Corneal disease	21	1.7
Uveal	11	0.8
Trauma	11	0.6
Others	61	4.9
<b>Total</b>	<b>1,248</b>	

**Table III – Retinal causes of blindness (1988 – 1995) Singapore, (Lim KH, 1996)**

	1988	1989	1990	1991	1992	1993	1994	1995	Total	%
Age-related maculopathy	26	19	16	23	24	14	22	24	168	31.4
Diabetic retinopathy	22	8	13	22	9	13	6	11	104	19.4
Retinitis pigmentosa	17	8	11	12	14	14	7	16	99	18.5
Myopic degeneration	15	12	9	13	6	9	16	3	83	15.5
Chorioretinal degeneration	11	12	1	2	6	2	2	4	40	7.4
Detached retina	8	1	2	5	1	1	3	3	24	4.4
Retinal degeneration	-	-	3	3	3	1	2	-	12	2.2
Maculopathy	-	-	1	-	4	-	-	-	5	1.0
<b>Total</b>	<b>99</b>	<b>60</b>	<b>56</b>	<b>80</b>	<b>67</b>	<b>54</b>	<b>58</b>	<b>61</b>	<b>535</b>	

**Table IV – Congenital causes of blindness (1988 – 1995) Singapore, (Lim KH 1996)**

	1988	1989	1990	1991	1992	1993	1994	1995	Total	%
Congenital cataract	7	10	3	2	4	2	1	4	33	27.5
Congenital nystagmus	3	1	5	3	5	3	3	1	24	20.0
Macular dystrophy	3		1	3	5	11	4	7	34	28.3
Bilateral optic disc hypoplasia					2				2	1.6
Retinopathy of prematurity	2		2	1	1	1			7	5.8
Severe choroidal degeneration					1				1	0.8
Strabismus					1	3			4	3.3
Microphthalmos			1	1	1				3	2.5
Congenital glaucoma					1				1	0.8
Marfan's syndrome			1		1				2	1.6
Leber's optic atrophy	1			1					2	1.6
Albinism			1	1					2	1.6
Goloboma				2					2	1.6
Anophthalmos	1		2						3	2.5
Total	17	11	16	14	22	20	8	12	120	

**Retinal causes**

Table III shows the retinal causes of blindness from 1985 – 1995. Age-related maculopathy (31.4%) was predominant in this group, followed by diabetic retinopathy (19.4%), retinitis pigmentosa (18.5%), and myopic degeneration (15.5%).

**Congenital causes**

Table IV shows the congenital causes of blindness from 1985 – 1995. Macular dystrophy (28.3%), congenital cataract (27.5%), and congenital nystagmus (20.0%), were the three main causes of congenital blindness.

**DISCUSSION**

By 1995, retinal blindness (57.6%) comprised more than half the causes of registered blind, with age-related maculopathy (31.4% of the retinal causes) causing nearly one-third of retinal blindness.

Congenital blindness (14.7%) is due to three main causes, viz macular dystrophy, congenital cataract, and congenital nystagmus, each comprising just less than one-third of the congenital causes.

Both retinal and congenital diseases are problems encountered at the two extremes of life. The problems are immense and each has inherent multifactorial incriminations. An understanding of these problems will have to await a long-term breakthrough in knowledge and solution, if at all possible.

Our latest figures (1985 – 1995) confirm the trend already established in the developed countries where the impact of affluence on the economic and social environment has resulted in better health services and the prevention of avoidable blindness.

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