

PREVALENCE OF CATARACT AMONG THE INSTITUTIONALIZED ELDERLY IN HONG KONG

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ABSTRACT

The Hong Kong 1981 Census found a high prevalence of blindness in the age group aged 65 and above. Visual defects short of blindness are also a special problem among the elderly and cataract is one of the most important causes.

We have studied the prevalence of cataract among 546 subjects living in homes or hostels for the aged in a New Town in Hong Kong. Cataract was defined as having a lens opacity and visual acuity worse than 20/100 in either eye. A prevalence of 45% among men and 32% among women was found. There was significant difference in prevalence between men and women aged below 75 but little sex difference was noted for the older age groups. Among the cataract cases detected on screening, about half had not had the diagnosis made previously. The results confirm the need for more epidemiological and health care studies on the visual problems among the aged.

Keywords: Cataract, institutionalized elderly, Hong Kong.

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INTRODUCTION

Ophthalmological problems are a major cause of disability in the elderly. In 1981, the prevalence of severe blindness (including people with either total blindness or decreased vision which limited their normal activities) in Hong Kong was 5.7 per 1,000 population in the age group 60 and above, ranking as the third major cause of disability, after deafness and paralysis of one side of the body⁽¹⁾. About half of the cases of blindness registered in Hong Kong were due to cataract. In 1984-85, 3694 people in Hong Kong were treated as in-patients for cataract which was the most common eye disease treated in hospital⁽²⁾. The average waiting time for an elective operation of cataract in our University Hospital is about 10 months and the demand for such services is great and increasing.

Apart from hospital statistics, little data are available concerning the prevalence of cataract in the community. In the United States, cataract together with glaucoma, senile macular degeneration, and diabetic retinopathy, form the major causes of blindness⁽³⁾. The 1971-72 National Health and Nutritional Examination Survey, and the Framingham Study showed that the prevalence of cataract increased with age. Over 40% of the surveyed population aged 75-85 were detected to have lens changes together with visual loss^(4,5). However, the prevalence of cataract in Hong Kong and other Chinese communities is largely unknown. This paper reports on a survey done among the elderly living in hostels and homes for the aged in a new town in Hong Kong.

METHODS

The study included all 7 institutions (4 hostels and 3 homes) in Shatin New Town with a total of about 650 subjects. A pilot survey was carried out at one of the institutions to test the procedure and logistics of the survey, and the results were included in the survey proper.

Visual acuity was measured by a standardized Optotype chart fixed 14 inches from the subject at eye level under adequate lighting, with subjects wearing corrective eye glasses if they normally used these. Each eye was examined in turn by covering the other eye. The subjects were asked to identify the numbers or the 'X,O' optotype. The examination began from the lowest level of visual acuity, i.e. 20/800, and proceeded to the next level if the subject could correctly identify all 3 numbers. When a subject could not identify all the numbers or optotype correctly, the previous acuity level was recorded. For the measurement of lens opacity, a powerful handlight was used with the observation done in a dim area. A trained observer did the examination

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throughout the survey.

Definition

A subject was identified to have a cataract if one of the following criteria was satisfied:

- (i) a lens opacity was present in one or both eyes, together with visual acuity of 20/100 or worse in the corresponding eye(s); or
- (ii) the subject reported that a cataract operation had already been performed.

A subject was identified to have a borderline cataract if there was a lens opacity but the visual acuity was better than 20/100.

RESULTS

Out of the 655 subjects living in the institutions, 546 were examined (83%). Those not examined were either out during the day of the survey (the majority), or those who were too ill or handicapped for inclusion in the study. Of those who were examined, 464 (85%) were women and 82 (15%) were men.

The prevalence rate of cataract increased with age (Table I) up to over 50% in both women and men age 85 and over. At ages 75-84 the rate was around 40%; below age 75 the rate was around 40% in women and under 20% in men. The sexes were significantly different only below age 75 ($\chi^2=4.0$, $p<0.05$). In both the sexes there was a significant trend⁽⁶⁾ of increased prevalence with increasing age (Chi square test for trend $\chi^2=4.8$ for men

Table I
Distribution of Cataract and Borderline Cases by Sex and Age Group

Age Group	n In each Age Group	Cataract Positive		Borderline	
		N	%	N	%
<i>Female*</i>					
60-64	8	3	37.5	0	0
65-74	94	37	39.4	9	14.1
75-84	264	117	44.3	28	10.6
85+	88	49	55.7	6	6.8
Total	454	206	45.4	43	9.5
<i>Male*</i>					
60-64	7	1	14.3	0	0
65-74	26	5	19.2	3	11.5
75-84	39	15	38.5	2	5.1
85+	7	4	57.1	1	14.3
Total	79	25	31.6	6	7.6

* 10 female and 3 male subjects were excluded because of blindness in one or more eyes

$p<0.05$; $\chi^2=5.4$ for women, $p<0.05$). Borderline cataract cases was found in a further 9.5% of the women and 7.6% of the men.

Among the 231 subjects whom the screening examination detected as having a cataract (Table II) about 49% had not been previously diagnosed. This included many whose eyes had not been examined by a doctor. As many as 88% of those aged over 90 years who were screened as having cataract (17 in number) had not been previously diagnosed (Table III). The proportion

undiagnosed was around 40% at lower ages (the group aged under 70 was small), but was over 80% at ages 90+. Out of the total of 154 subjects who had previously been told that they had a cataract (Table II) 37 were negative on screening. Among them 16 were of borderline status.

Table II
Comparison of Screening Results with Previous Diagnosis of Cataract

	Previous Diagnosis of Cataract				Total	
	Screened as positive	Yes n (%)	No n (%)	Total n (%)	Total n (%)	
Yes	117	(51)	114	(49)	231	(100)
No	37*	(12)	278	(88)	315	(100)
Total	154	(28)	392	(72)	546	(100)

* Of the 37, 16 were found to have lens opacity but with visual acuity better than 20/100

Table III
Distribution of Cataract Positive Subjects who have not had a previous diagnosis of cataract by age

Age Group	Cataract Cases	Not previously Diagnosed n (%)
<70	9	6 (66.7)
70-79	102	46 (45.1)
80-89	103	46 (38.3)
90	17	15 (88.2)
Total	231	114 (49.4)

Only about 40% of these previously diagnosed to have a cataract had already had an operation. There was no difference at different ages.

DISCUSSION

The survey showed a high prevalence of cataract among the institutionalized elderly. The prevalence increased with age and was higher among women than men below age 75. The results are comparable with studies in the United States. The Framingham and the National Health and Nutrition Examination Surveys also indicate a sharp increase of prevalence with age and a higher prevalence among women compared to men⁽⁷⁾. The overall percentage prevalence of cataract was higher in the present study, but this is at least partly because the Hong Kong sample was older than the sample in the U.S. Also, the Hong Kong sample came from the elderly living in institutions rather than from a cross section of the community, and this might explain the higher prevalence.

The criteria and methods used in this study were different from those of other studies which tended to use lens changes together with the best corrected visual acuity of 20/25 or (20/30) or worse as the criteria. As it was not practical in our study to have formal eye sight correction carried out, the best correction with the subjects own eye glasses was adopted. Nonetheless, as in Western populations, the prevalence of cataract was rather high in our study.

Among the 231 subjects identified to have a cataract, only half reported that they had previously been told by a doctor to have such a condition. The high proportion of subjects who were unaware of their condition could perhaps reflect the need of out-reaching medical services for the elderly. It may also reflect the subjects' acceptance of deteriorating vision to be a normal ageing phenomenon which therefore attracted little emphasis or awareness of the need for medical attention.

Memory error or misunderstanding of the medical terms could have accounted for the small number of subjects who reported a previous diagnosis of cataract but were not found to have any lens opacity.

Our study reveals the large size of the problem of cataract among the elderly in Hong Kong. The problem deserves further attention both to the aetiology and prevention of cataract and also to the provision of health

care services to ensure a better quality of life for the aged. Research and development in this direction is particularly urgent in view of the increasing elderly population in the Asian countries.

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REFERENCES

1. Census and Statistics Department. Hong Kong 1981 Census Disablement characteristics. Hong Kong: 1981.
2. Medical and Health Department. Director of Medical and Health Services. 1984-1985 Departmental Report. Hong Kong: Government Printer. 1985.
3. Ederer F. Methodological problems in eye disease epidemiology. *Epidemiol Rev* 1983; 5: 51-66.
4. Kahn HA, Leibowitz HM, Ganley JP, et al.: The Framingham Eye Study. I: Outline and major prevalence findings. *Am J Epidemiol* 1977; 106: 17-32.
5. Sperduto RD, Seigel D: Senile lens and senile macular changes in a population-based sample. *Am J Ophthalmol* 1980; 90: 86-91.
6. Armitage P. *Statistical Methods in Medical Research*. Oxford: Blackwell Scientific Publications, 1980: 363-4.
7. Leske MC, Sperduto RD: The epidemiology of senile cataract: a review. *Am J Epidemiol* 1983; 118: 152-65.