

Impact of a sight-saver clinic on the prevalence of blindness in northern KwaZulu

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The prevalence of blindness in the Ingwavuma district of northern KwaZulu was 1% (95% confidence interval 0,75 - 1,25) in 1990, and the prevalence of blindness due solely to age-related cataract was 0,39% (95% CI 0,24 - 0,54). Eight sight-saver clinics were held between 1990 and 1993. Nine hundred and thirteen patients were seen and 113 cataract extractions performed at a cost of R62 000. The prevalence of blindness due solely to age-related cataract was reduced by 25% to 0,29% (95% CI 0,17 - 0,41). The overall prevalence of blindness was reduced by 4% to 0,96% (95% CI 0,72 - 1,20). The provision of aphakic spectacles to aphakic patients whose spectacles have either been lost or broken would effect a further 11% reduction to 0,85% (95% CI 0,63 - 1,07). The establishment of a permanent sight-saver clinic staffed by an ophthalmic medical assistant who is working full-time in this capacity would facilitate an improvement in the delivery of eye care in the area.

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This study evaluates the impact of a sight-saver clinic on the prevalence of blindness in the Ingwavuma district of northern KwaZulu. The Bureau for the Prevention of Blindness was established in 1944 by the South African National Council for the Blind, to provide preventive and curative eye care services to the rural indigent people of South Africa.

Four-day sight-saver clinics were first started in 1981. There are currently 20 sight-saver clinic venues in South Africa, and 70 sight-saver clinics are held annually. Each clinic is staffed by a team of three nurses employed by the Bureau and one volunteer ophthalmologist. The clinic dates are advertised in the area at least 1 year in advance. The patients seen at the clinic should be pre-screened by an ophthalmic nurse working in the area. Up to 300 outpatients may be seen on the day of the clinic. Patients requiring surgery are admitted and surgery is performed over the 2

subsequent days. Patients with cataracts are offered extracapsular lens extraction with intra-ocular lens implantation. Up to 40 surgical procedures are undertaken over the 2 operating days. The patients are discharged on the 4th day.

Method

Mosvold Hospital in the Ingwavuma district in northern KwaZulu was selected as a suitable clinic for assessment.

A low vision and blindness prevalence survey was conducted in the health ward in September 1990.¹ All people living in the Mosvold health ward made up the sampling frame. A random cluster sampling technique, using 60 clusters of 100 persons each, was used. The clusters were selected by means of a probability proportional to population size procedure. The initial homestead for each cluster was randomly selected, and adjacent homesteads were then visited until 100 people per cluster were found. All people in the homestead containing the 100th person were included in the sample.

Each of the 12 field teams comprised 2 nurses. Each team surveyed a single cluster per day. The age and sex of each person in the homestead at the time of the survey were recorded. Visual acuity was assessed by means of a standardised technique with a Snellen 'E' chart. All who were unable to read the 6/18 line with one or both eyes, young children or infants whose mothers or guardians said they had an eye problem, people who wore glasses for distance vision, and those who reported having had an eye operation were referred to the ophthalmologist for examination on the same day. The ophthalmologist's examination comprised measurement of the visual acuity in each eye with and without spectacle correction, examination of the anterior segment with a torch light, and examination of the optic disc and macula with a direct ophthalmoscope. Where indicated, it also included a subjective refraction and Schiotz tonometry.

The severity and causes of visual impairment were classified according to the WHO classification.^{2,3} People whose cataracts had been treated by surgery were included as 'aphakic'.

Following this survey eight sight-saver clinics were subsequently held at Mosvold Hospital. A second low vision and blindness prevalence survey was repeated in the health ward in July 1993; the same method was used for the survey in 1990.

Results

The prevalence of blindness was 1% (95% CI 0,75 - 1,25) in 1990. The leading cause of blindness was age-related cataract (59,0%). Age-related cataract alone, without any other pathology, was responsible for 39,3% of blindness. Uncorrected aphakia was responsible for 3,3% of blindness. The 1991 population census figure for the health ward is 81 901.⁴ There were an estimated 819 blind people in the health ward, of whom 322 were blind due solely to age-related cataract.

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Eight sight-saver clinics were held between September 1990 and July 1993. Nine hundred and thirteen patients were seen. Seventy-seven patients were referred to a regional hospital. One hundred and thirteen cataract extractions for age-related cataract (some of those on 'second eyes' of patients who had previously undergone cataract extraction on the other eye), 6 trabeculectomies for chronic glaucoma and 12 other procedures were performed. Some of the patients seen and operated on were from adjacent health wards. The cost of the sight-saver clinics is estimated at R2 000 per day, a total of R62 000 for the 8 sight-saver clinics. This translates to R67,91 per patient seen and R548,67 per cataract operation.

The prevalence of blindness was 0,96% (95% CI 0,72 - 1,20) in 1993. The leading cause of blindness was age-related cataract (59,3%). Age-related cataract alone was responsible for 30,5% of blindness, and uncorrected aphakia was responsible for 11,9%. There were an estimated 786 blind people in the health ward, of whom 240 were blind due solely to age-related cataract. Since the establishment of the sight-saver clinic, there has only been a 4% reduction in the prevalence of blindness. This could be increased to 15% by the provision of aphakic spectacles to aphakic patients whose spectacles have been lost or broken. Blindness due solely to age-related cataract had been reduced by 25%, from 0,39% to 0,29%.

Discussion

Age-related cataract is recognised as the leading cause of blindness in the rural areas of South Africa^{1,5} as elsewhere in Africa.⁶⁻¹⁵ It is appropriate, therefore, that the Bureau for the Prevention of Blindness direct its efforts at provision of cataract surgery in rural areas through its sight-saver clinics. But while cataract is responsible for 59% of blindness, 50% of the blindness due to cataract is 'complicated' by the presence of other pathology in the same eye, or by incurable pathology causing blindness in the other. The presence of other pathology such as corneal scarring in the same eye may preclude the possibility of curing the blindness by the simple expedient of cataract surgery at a sight-saver clinic. The presence of incurable blindness in the other eye precludes the possibility of undertaking cataract surgery at a peripheral sight-saver clinic. Both necessitate referral to a distant hospital, which is often unacceptable or impractical for elderly, rural, indigent patients. We have reduced the prevalence of blindness due to cataract alone by 25%, but this is only a 10% reduction in the overall prevalence of blindness. This is further offset by an increase in the blindness prevalence due to uncorrected aphakia from 3,3% to 11,9%. Such patients have had cataract surgery and been issued with glasses, but their glasses have either been lost or broken. This problem has been well recognised elsewhere.⁵ The Bureau's present policy of offering patients an intra-ocular lens in preference to aphakic spectacles following lens extraction, should reduce this problem in the future. A further 11% reduction in the blindness prevalence could be achieved by distributing aphakic spectacles. These are available free of charge at the sight-saver clinics.

The establishment of permanent sight-saver clinics, staffed by ophthalmic medical assistants working full-time in this capacity, would facilitate an improvement in the delivery of eye care in the rural hospitals and clinics. While the ophthalmic medical assistants might not be able to offer cataract surgery, they would, among other things, be able to provide appropriate postoperative care, enabling patients with 'only eyes' to be operated on at the sight-saver clinic; they would also be able to dispense aphakic spectacles to patients whose spectacles have been lost or broken. Both of these services would do much to improve the effectiveness of the sight-saver clinics.

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