

## WORLD VIEW

# Rapid assessment of cataract at pension pay points in South Africa

Colin Cook, Herman Kluever, Letty Mabena, Hans Limburg

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See end of article for authors' affiliations

Correspondence to:  
Dr C Cook, Department of Ophthalmology, Groote Schuur Hospital, Observatory, Cape Town 7925, South Africa; myrna@mweb.co.za

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**Aim:** To test a method for the rapid assessment of cataract blindness in South Africa.

**Design:** Randomised cluster-based cross-sectional survey (20 clusters of 50 each).

**Setting:** Pension pay points in Moretele district, North West Province, South Africa.

**Subjects:** Female pensioners aged  $\geq 60$  years, and male pensioners aged  $\geq 65$  years.

**Outcome measures:** (1) Prevalence of cataract requiring surgery; (2) prevalence of blindness due to cataract; (3) cataract surgical coverage; (4) cataract surgery outcome; and (5) barriers to cataract surgery.

**Results:** 1000 pensioners were screened (681 women and 319 men). 17.2% of pensioners had operable cataract (visual acuity  $< 6/60$ ); 95% CI –3.4% to 3.4%); 15.6% of pensioners were blind due to cataract (95% CI –3.1% to 3.4%); and 5.6% of pensioners had had previous cataract surgery, 55.4% with intraocular lens implant and 44.6% without intraocular lens implant. The cataract surgical coverage was 24.6%. 80% of people who had had surgery were satisfied with the result, but 26.8% had a poor outcome according to the World Health Organization criteria. The main barrier to uptake of surgery was a lack of awareness of the availability of the surgery.

**Conclusions:** Rapid assessment of cataract at pension pay points is a useful and effective tool for our district Vision 2020 programmes in South Africa. Steps need to be taken to raise awareness of the availability of cataract surgery among indigent pensioners, and to improve the quality of visual outcome after surgery by ensuring routine monitoring of postoperative visual acuity.

Cataract is the leading cause of blindness in South Africa, responsible for about 50% of blindness and affecting an estimated 0.40% of the population (about 160 000 people). It is a priority for the first phase of the Vision 2020 programme. There is the need for a tool for rapid assessment of cataract in the community.<sup>1</sup> Cataract is primarily a disease of elderly people. All indigent women aged  $\geq 60$  years and all indigent men aged  $\geq 65$  years are eligible for a government old-age pension. These pensions are paid monthly at designated pension pay points. It is necessary for the pensioners to attend personally to collect their pension each month. The pension pay points therefore provide an ideal situation for any form of rapid assessment or case finding in elderly indigent people. Van Dijk *et al*<sup>2</sup> showed that screening of old-age pensioners at pension pay points could be a feasible way of conducting rapid assessment of cataract in South Africa.<sup>2</sup> This study reports the results of rapid assessments at pension pay points in the Moretele district of North West Province.

## METHODS

### Preparation

In consultation with the department of social services, a list of the pension pay points in the district was prepared. Of a total of 57 pay points, 20 were randomly selected. The dates for the selected pay points were identified, and a diary of visits was drawn up. Meetings were held with each of the pension pay point committees, to obtain their approval and consent to the planned visit by the team. Specific ethical approval from an ethics committee was not obtained, as the pension point visits and screening were planned as a component of the ongoing Vision 2020 cataract case finding in the district.

### Training

A team of one eye nurse and two nursing assistants was identified from among the staff of the Bureau for the Prevention of Blindness. The assistants were trained to screen

the selected pensioners, and the eye nurse was trained to examine and interview those pensioners whom they referred.

### Screening

At each pay point, the pensioners in the queue were given a number and 50 numbers were randomly selected. Each person selected was asked whether they had had previous eye surgery. The vision in each eye was screened by asking the person to "count fingers" at 6 m. If any person reported having had previous eye surgery or failed the count fingers test in one or both eyes, they were referred to the eye nurse.

### Examination and interview of referred pensioners

Referred pensioners were examined and interviewed by the eye nurse. The presenting visual acuity in each eye was tested using a Snellen chart. The anterior segment of each eye was examined macroscopically with a torch, to detect whether a cataract was present. If anyone was found to have an unoperated cataract, they were asked why they had not attended for surgery. If anyone was found to have had cataract surgery, they were asked whether they were satisfied with the result of the surgery. Any people identified with an eye problem were given a referral letter to the nearest eye clinic.

## RESULTS

### Prevalence of cataract and cataract surgery

Table 1 shows the pensioners with cataract requiring surgery (presenting visual acuity  $< 6/60$ ) and the pensioners who had had cataract surgery.

### Cataract surgical coverage

This refers to the proportion of people who had cataract requiring surgery (operable cataract) who had had surgery, and is calculated as  $-56/(56+172) = 24.6\%$ .

**Abbreviation:** CSC, cataract surgical coverage

**Table 1** Pensioners with cataract and pensioners who had had cataract surgery

	n (%)
People with cataract requiring surgery (VA <6/60 in one or both eyes)	172 (17.2)
People blind due to cataract (VA <3/60 in the better eye)	156 (15.6)
People who had had previous cataract surgery without intraocular lens (aphakia)	25 (2.5)
People who had had previous cataract surgery with intraocular lens (pseudophakia)	31 (3.1)

VA, visual acuity.

Table 2 shows the outcome in the people who had had cataract surgery. Table 3 shows the barriers to uptake of cataract surgery.

## DISCUSSION

The examination method used for this rapid assessment of cataract among pensioners at pension pay points has a number of limitations. The referred pensioners were examined by an experienced ophthalmic nurse at the pension pay point. This examination comprised only testing the Snellen acuity and examining the anterior segment macroscopically with a torch. It did not include slit-lamp examination and funduscopy.

There is only a difference of 16 people between those documented with cataract requiring surgery (visual acuity <6/60 in one or both eyes) and those blind due to cataract (visual acuity <3/60 in the better eye). This seems slightly implausible. It could be that, under the suboptimal conditions in which the examinations were made, visual acuity <3/60 was overdiagnosed in the better eye, and the proportion of people blind due to cataract is, in fact, less than the reported 15.6%.

Routine implantation of intraocular lenses is recommended for cataract surgery as part of our Vision 2020 programmes. Intraocular lens implantation has been routine in provincial hospitals and in sight-saver clinics run by the Bureau for the Prevention of Blindness for about 15 years. However, 44.6% of pensioners who had had cataract surgery were found to be aphakic. This is surprising. Notwithstanding the limitation of examining the eyes macroscopically with a torch and not with a slit lamp or ophthalmoscope, it is unlikely that pseudophakia was misdiagnosed as aphakia. It is presumed that the high proportion of aphakia seen in this district is a result of previous surgical practice in the district.

Glaucoma and diabetic retinopathy are the second and third leading causes of blindness after cataract. It is possible that, using the simplified examination technique that did not include funduscopy, some cases of posterior segment pathology could have been misdiagnosed as cataract.

Cataract surgical coverage (CSC) could be calculated for people or for eyes, and could be calculated using a visual acuity cut-off of <6/60 or <3/60. The usual indication for cataract surgery in our government provincial services is a visual acuity of <6/60 in one or both eyes, and the CSC has been calculated for pensioners with "operable cataract" defined using this criterion. The CSC was 24.6%. This is low. Only one-quarter of the pensioners in the district who have cataract needing surgery have actually had surgery. Ideally, we would like the CSC to be 100%. Moretelele district is served by three hospitals where cataract surgery is performed, all within a 30 km radius. The CSC in the Jozini district, a remote rural district in KwaZulu-Natal Province, was found to be 38.5%.<sup>3</sup>

The reasons for this low surgical coverage might be evident in the barriers identified by those people who were found to have operable cataract but who had not had surgery. The single most common barrier identified in 50.0% of people was a lack of

**Table 2** Cataract surgery outcome

	n (%)
People who had had cataract surgery	56 (100)
People who were happy with the result	46 (82.1)
People who were unhappy with the result	10 (17.9)
VA outcome (operated eye)	
Good	12 (21.4)
Okay	29 (51.8)
Poor	15 (26.8)

VA, visual acuity.

**Table 3** Barriers to uptake of cataract surgery

	n (%)
People needing surgery	172 (100)
Unaware of availability	86 (50)
Fear of surgery	15 (8.7)
On a waiting list	15 (8.7)
Cost	12 (7.0)
Neglect by family	12 (7.0)
Not referred	12 (7.0)
Not considered necessary	11 (6.4)
Other illness	6 (3.5)
Bad service	3 (1.7)

awareness of the availability of a cure for their severe visual impairment or blindness. There is clearly a need to raise awareness of the availability and benefits of cataract surgery among elderly indigent people.

The visual outcome in the operated eyes of those people who had had cataract surgery was worse than the outcomes recommended by the World Health Organization,<sup>4</sup> although >80% of people said that they were happy with the results of their surgery. It is unclear whether a proportion of the 26.8% of people with a visual acuity <6/60 had uncorrected aphakia because their aphakic glasses had been lost or broken and had not been replaced. This has been recognised as an important cause of blindness.<sup>5</sup> There is clearly a need to implement a system of qualitative monitoring of the visual acuity outcome after cataract surgery.

Rapid assessment of cataract at pension pay points is a useful tool for the monitoring of cataract services in our Vision 2020 programmes, and could be used in other districts in South Africa and in neighbouring Namibia.

## Authors' affiliations

**Colin Cook**, Department of Ophthalmology, Groote Schuur Hospital, Observatory, Cape Town, South Africa

**Herman Kluever, Letty Mabena**, Bureau for the Prevention of Blindness, Pretoria, South Africa

**Hans Limburg**, International Centre for Eye Health, London, UK

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