

Prevalence and determinants of self-reported ocular morbidity and utilization of eye services in Sri Lanka: results from a national population-based survey

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Abstract

Introduction Data on ocular morbidity is essential for planning primary and referral eye care services.

Objectives Determine the prevalence and causes of self-reported ocular morbidity and eye care service utilization in Sri Lanka among adults ≥ 40 years of age.

Methods Multistage, stratified, cluster random sampling was used to select a nationally representative sample aged ≥ 40 years. All participants were administered a questionnaire to assess ocular morbidity they had experienced in the previous month and the pattern of service utilization for reported eye problems. The interviews were conducted by a team of trained investigators at the clinical examination site before they underwent an eye examination.

Results 5779 of those presenting for a clinical examination were interviewed among 6713 enumerated (86.1%). The prevalence of self-reported ocular morbidity was 89.9% [95% Confidence Interval (CI): 89.0-90.6%]. Near vision impairment was the commonest problem reported (72.1%; 95% CI: 70.8-73.3%) followed by distance vision impairment (36.2%; 95% CI: 34.9-37.5%). Among those reporting an eye problem, 31.4% sought treatment. 49.4% of those seeking care utilized private facilities. Financial constraints, perceptions that the condition was not serious or had insufficient impact on day-to-day tasks were the most important reasons for not accessing care.

Conclusions Ocular morbidities are common in the Sri Lanka population; however utilization of services is relatively low, particularly for asymptomatic illnesses. It is important that the service planners take into account geographical and social inequalities and focus the services on underserved areas and disadvantaged social groups.

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Introduction

Ocular morbidity is defined as the presence of any eye condition, which is perceived as important or significant from either a clinician or a client perspective [1]. Therefore, ocular morbidity encompasses all conditions that lead to vision impairment or blindness (e.g. cataract, diabetic retinopathy, glaucoma etc.) as well as eye problems that are not sight-threatening yet impact the patient's functioning and quality of life (discharge, tearing, irritability, diminished near vision etc.). The global age-standardized prevalence of blindness is estimated at 1.9% and moderate/severe visual impairment (MSVI) at 10.4% for adults aged ≥ 50 years [2]. The prevalence of blindness in South Asia (4.4%) is higher than the global average [2]. The prevalence of self-reported ocular morbidity is also high, ranging between 13-33% in Nigeria, Kenya, Pakistan and China [1;3-6]. A much higher prevalence has recently been reported among adults in other countries at 57% in Canada [7], 67% in Fiji [8] and 91% in Timor Leste, [9].

Patients' health seeking behavior for eye care has been studied recently in a variety of settings [1,4,8-11], with many studies highlighting that the demand for eye care services is low, with many patients delaying access to treatment or not seeking care at all [11]. Recent studies in Kenya [1] and Nigeria [4] found that only half of those experiencing eye problems sought treatment or advice from trained professionals, and that eye care may be ranked

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lower in priority than other health problems. A study in Cameroon highlighted that more than 60% of people did not seek treatment for eye care compared with 88% who sought treatment for fever within a week of onset [12]. Evidence suggests that an individual's decision-making on whether and where and when to seek treatment is complex and is determined by an array of intrinsic (disease severity, patient characteristics, perceived seriousness etc.) and extrinsic factors (cost of care, transportation links, perceived efficacy of treatment and past experience with the health system) [13]. In low and middle-income countries (LMICs) patients' demand for eye care is often restricted by the limited number of eye care facilities, particularly those at secondary and tertiary levels, resulting in increased time and transport costs required for access, as was recently reported from Sri Lanka [14].

The situation in Sri Lanka is unique as health indicators are comparable to those in high income countries [15]. There has been a significant improvement in Sri Lanka's health system and health outcomes over the past 8 decades, particularly in maternal and child health [15]. However data are not available for eye care.

Available evidence emphasises that client behaviour is context specific as the availability of facilities plays an important role. Generating evidence on ocular morbidity is important as it helps in developing a context-specific plan for eye care services in a country. Such data does not exist in Sri Lanka. Therefore, a study was commissioned by the Ministry of Health to conduct a study on a nationally representative sample of adults aged ≥ 40 years of age the main focus of which was blindness and visual impairment. An assessment of self-reported ocular morbidity, utilization of eye care services and barriers to accessing services was included in this survey.

Methods

Detailed methodology of the national survey has been described in a companion paper in this issue. In brief, multi-stage stratified cluster random sampling was used to identify a cross-sectional, nationally representative sample aged ≥ 40 years. All nine provinces and a random sample of divisional secretariats were included.

The following parameters were used to determine the sample size: prevalence of blindness (presenting vision) among those aged ≥ 40 years – 2.5%; confidence interval – 95%; allowable error – 0.02; precision – 80%; design effect – 1.5 and a response rate of 85%.

The estimated sample size was 6,600 but to ensure that all 25 districts were included, it was inflated to 6800 by adding two clusters. Thus it was planned to cover 100 respondents across 68 clusters in the country.

An initial house-to-house enumeration yielded respondents who were asked to attend a temporary clinical examination site set up in a convenient location within each cluster.

Two trained interviewers verified participants' eligibility and administered the questions to elicit a history of eye problems, source of treatment and barriers to treatment. Participants were specifically asked if they had experienced an eye problem/complaint in the month preceding the survey and whether and when they had sought care. For participants that reported experiencing more than one eye problem/complaint, all their problem/complaints were recorded. Respondents who had an eye problem but had not sought care were asked about barriers preventing them from accessing eye care services: Participants could give multiple responses. Written informed consent was obtained from all eligible participants.

All the core staff underwent intensive training for one week prior to the start of the survey followed by a pilot survey. Fieldwork took place over a one-year period from 2013 to 2014.

The study protocol was reviewed and approved by the Institutional Ethics Committees of the London School of Hygiene and Tropical Medicine, London, UK, the Faculty of Medicine, University of Colombo, Sri Lanka and the Indian Institute of Public Health, Hyderabad, India.

The data were analysed using STATA 13.0 (StataCorp LP, Texas, USA). Descriptive analyses and cross tabulations with calculation of Pearson chi squared tests were performed. Firstly, univariate analysis was done, to assess associations between socio-demographic factors and the risk of self-reported ocular morbidity. The socio-demographic variables included age, gender, socio-economic status (SES), literacy status, place of residence, province of residence and ethnic group. Socio economic status was a composite measure based on family possessions. Family possessions like four-wheelers, two-wheelers, computer, refrigerators, colour television, telephone etc. were first assessed and a score calculated and cumulated for the family. The cumulative scores were then divided into four quartiles from lowest (quartile 1) to highest (quartile 4). For the sake of analysis the lowest 2 quartiles were classified as lower socio-economic status while the highest 2 quartiles were classified as upper socio-economic status. Literacy was categorized as illiterate, less than primary school, less than secondary school and beyond secondary school (O level and above). Further analyses were undertaken using logistic regression. All socio-demographic variables which were significant at 0.05 level in univariate analysis were included in the multivariate regression analysis. All tests are two sided, and the odds ratios (OR) and 95% CI quoted are derived from logistic regression models.

Results

A total of 6713 persons aged ≥ 40 years were eligible for the survey. 5779 (86.1%) presented for the clinical examination and 5193 were interviewed. The mean age of participants was 56.7 (± 10.9) years and 59% were female.

The prevalence of ocular morbidity in the one-month period was 89.9% (95% CI: 89.0-90.6%) (Table 1). The prevalence of ocular morbidity was similar across most socio-demographic parameters, and was significantly higher in participants with higher socio-economic status (SES) (adjusted OR 1.4 (95% CI 1.2-1.6%, $p < 0.001$) (Table 1). The majority (81.9%) reporting an eye problem in the past month said that they still had the problem at the time of the survey. Near vision impairment was the commonest problem reported (72.1%; 95% CI: 70.8-73.3%) followed by distance vision impairment (36.2%; 95% CI: 34.9-37.5%) (Table 2). Irritability/itching eyes, watering/tearing and pain were the other commonly reported eye symptoms. (Table 1).

A high proportion of individuals who were blind or moderately/severely visually impaired from all causes did not seek care (65.9%), and the proportion was even higher amongst those severely visually impaired from refractive error (77.8%) or cataract (83.9%). Only 155 participants provided information on how much time had elapsed before they sought treatment. 19.3% (30/155) had attended a facility within 48 hours while nearly half (47.4%; 74/155) sought treatment six or more months after they noticed the eye problem. Nearly half (49.4%; 802/1631) used private facilities and 39.4% (642/1631) used government health facilities. Others visited an eye camp (3.4%), or used traditional medicines or eye medicines available at home.

Less than a third (31.4%) of those reporting an eye problem had sought treatment for their condition (Table 3). Reasons for not accessing eye care services (3512 persons) are shown by visual acuity and cause of visual impairment (Table 3). Financial constraints and lack of time were the most important reasons for not accessing care (25.6% and 15.1% respectively). Financial constraints was an even greater barrier for those who were visually impaired (39.1-47.6%). Only a relatively small proportion of individuals who were visually impaired reported the problem as not being serious enough to seek treatment or they could manage their activities (10.3-23.8%).

Females were significantly more likely to report an eye problem than males (adjusted OR 1.24, 95% CI: 1.05-1.48) as were participants with lower SES (Adjusted OR-1.5; 95% CI: 1.2 - 1.8). Participants living in the Southern province had the highest odds of reporting an eye problem (Adjusted OR-4.0; 95% CI: 2.0-7.7) compared to those in the North Central province, which had the lowest prevalence of ocular morbidity (Table 4).

Sex and marital status were not associated with whether eye care services had been accessed. However the following groups had significantly higher odds of using services in the adjusted analysis: higher SES, living in the Southern, Central, Sabaragamuwa and Western provinces, increasing age, urban residence, the better educated and those belonging to the Sinhala or Moor ethnic group. Distance from the nearest health facility did not affect the

prevalence of reported ocular morbidity or access to eye care services (Table 4).

Participants who reported a foreign body in the eye or an eye injury, or dry or painful eyes or problems with near vision were more likely to have accessed services than those with other symptoms. Only 30.6% (1133/3703) of those who complained of difficulty with near vision and 29.1% (542/1859) of those who complained of difficulty in seeing at a distance had accessed eye care services (Table 5).

The mean monthly expenditure on general health care in a 30-day recall period was SLR 1310 (US\$ 8.5). Similar levels of expenditure were reported in the households, where participants aged ≥ 40 years reported an eye problem. What these expenses related to was not investigated.

Discussion

The high prevalence of self-reported OM in this study is not surprising as, in contrast to other studies of OM which included people of all ages [1,3,4], this survey focused on those aged ≥ 40 years, the majority of whom would have presbyopia. For example, in the Nigerian survey, which included all age groups, 84.6% of those aged ≥ 55 years reported ocular morbidity [4]. The main types of morbidity reported were also similar with the majority experiencing near vision problems and gradual loss of vision. Similar to other studies, a higher prevalence of self-reported OM in Sri Lanka was associated with being a female and belonging to lower SES [1,4].

Only a third of those who had eye complaints, as in other studies in South Asia sought treatment [6,11,16,17]. The reasons for not seeking care were also similar with the lack of perceived seriousness of the problem [8,11] and financial constraints [14;17-19] being the main reasons.

In the present study financial constraints were the leading reason for not seeking care for participants with visually impairment from cataract and refractive errors. Accurate information on the cost of health care or eye care in Sri Lanka are not available in the published literature but a recent study in a hospital in Sri Lanka estimated the out-of-pocket expenditure for cataract surgery to be SLR 25,407 (US\$ 165.4). The provider cost for the delivering cataract surgery was SLR 15,668 (US\$ 102) [20]. Although the recently the Government of Sri Lanka provides intraocular lenses at no cost to the patient, the costs for cataract surgery will be significantly higher when patients need to buy their own lenses, especially the high-end costly lenses. Therefore, the finding that financial constraints is a significant barrier to care for people with visual impairment is not surprising. This was also confirmed by the data from the multivariate analysis, which shows that those belonging to more disadvantaged groups (lower SES, poorer literacy, resident in rural areas) are less likely to seek care than other groups in the population.

Table 1. Prevalence of self-reported ocular morbidity and association with socio-demographic characteristics

<i>Characteristics</i>	<i>Interviewed</i>	<i>Reporting Ocular Morbidity in past month</i>		<i>95% CI</i>
	<i>N</i>	<i>N</i>	<i>Prevalence (%)</i>	
Respondents	5779	5193	89.8	89.0 - 90.6
Age groups				
40 - 49 y	1708	1520	89.0	87.4 - 90.4
50 - 59 y	1859	1685	90.6	89.2 - 91.9
60 - 69 y	1424	1276	89.6	87.9 - 91.1
70+ y	788	712	90.4	88.0 - 92.2
Gender				
Male	2356	2089	88.7	87.3 - 89.9
Female	3423	3104	90.7	89.6 - 91.6
Education				
≥Secondary	4120	3689	89.5	88.6 - 90.4
< Secondary	1659	1504	90.7	89.1 - 92.0
Socio-economic status				
Lower	3262	2983	91.4	90.4 - 92.4
Higher	2517	2210	87.8	86.4 - 89.0
Residence				
Rural	5102	4575	89.7	88.8 - 90.5
Urban	677	618	91.3	88.9 - 93.2
Marital Status				
Currently Married	4399	3950	89.8	88.9 - 90.6
Currently Unmarried/ Widowed	1380	1243	90.1	88.4 - 91.5
Ethnic Groups				
Moors	180	165	91.7	86.6 - 94.9
Sinhala	4546	4106	90.3	89.4 - 91.1
Tamils	1053	922	87.6	85.4 - 89.4
Province				
Western	1648	1485	90.1	88.6 - 91.5
Central	1122	1040	92.7	91.0 - 94.1
North Western	586	513	87.5	84.6 - 90.0
Eastern	499	450	90.2	87.2 - 92.5
Northern	469	413	88.1	84.8 - 90.7
Sabaragamuwa	510	465	91.2	88.4 - 93.3
North Central	346	288	83.2	78.9 - 86.8
Uva	348	300	86.2	82.1 - 89.4
Southern	251	239	95.2	91.7 - 97.3
Distance from health centre				
≤2 kms	2591	2334	90.1	88.9 - 91.2
> 2 kms	2815	2528	89.8	88.6 - 90.9

Table 2. Frequency and type of self-reported ocular morbidity

	<i>N (5779)</i>	<i>%</i>	<i>95% CI</i>
Reported an eye problem in the preceding month	5193	89.9	89.0 - 90.6
Main eye problem reported in preceding month*			
Problem with near vision	3742	72.1	70.8 - 73.3
Problem with distance vision	1879	36.2	34.9 - 37.5
Irritable, sore, burning eyes	757	14.6	13.6 - 15.6
Watering	592	11.4	10.6 - 12.3
Pain in the eye	447	8.6	7.9 - 9.4
Foreign body in eye	83	1.60	1.3 - 2.0
Red eye with discharge	50	0.96	0.73 - 1.3
Dry eye	19	0.37	0.23 - 0.57
Floaters in the eye	19	0.37	0.23 - 0.57
Diplopia (Double vision)	7	0.13	0.06 - 0.28
Others	3	0.06	0.002 - 0.18

*Total more than 5193 as some participants had more than one complaint

Table 3. Reasons for not seeking care among respondents with self-reported ocular morbidity

	<i>All respondents</i>		<i>VA >6/12 both eyes</i>		<i>Moderate/severe visual impairment and blind (<6/18 better eye)</i>		<i>Refractive errors with severe visual impairment</i>		<i>Cataract with severe visual impairment</i>	
	<i>N (5193)</i>	<i>%</i>	<i>N (3295)</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
Sought treatment for eye problem	1631	31.4	935	28.4	335	33.2	12	22.2	15	16.1
Did not seek any treatment	3512	67.6	2328	70.6	665	65.9	42	77.8	78	83.9
Did not respond	50	1.0	32	1.0	9	0.9	0	-	0	-
Total	5193	100.0	3295	100.0		100.0		100.0		100.0
Reasons reported for not seeking treatment*										
Financial reasons (lack of money)	900	25.6	482	20.7	260	39.1	20	47.6	33	42.3
Lack of time	531	15.1	407	17.5	58	8.7	5	11.9	3	3.8
Did not think it was serious enough to seek treatment/ could manage all activities	407	11.6	1076	46.2	148	22.3	10	23.8	8	10.3
Used eye medicines available at home	233	6.6	150	6.4	44	6.6	0	-	4	5.1
Accepted it as it is part of ageing	123	3.5	53	2.3	47	7.1	1	2.4	8	10.3
No one to accompany/ lack of escort	96	2.7	36	1.5	42	6.3	2	4.8	8	10.3
Got better without any treatment	80	2.3	55	2.4	17	2.6	1	2.4	4	5.1
Too far	56	1.6	29	1.2	20	3.0	1	2.4	4	5.1
Did not know where to go	41	1.2	18	0.8	15	2.3	0	-	5	6.4
Fear	3	0.1	2	0.1	1	0.1	0	-	0	-
Other serious health problems	3	0.1	1	0.04	2	0.3	0	-	0	-
Other family priorities	2	0.06	1	0.04	0	-	0	-	0	-

*Some participants reported more than one reason

Table 4. Adjusted odds of reporting eye problems and seeking treatment for eye problems

<i>Variable</i>	<i>Reporting eye problem</i>		<i>Accessing treatment for eye problem</i>	
	<i>Univariate analysis OR [95% CI]</i>	<i>Multivariate analysis Adjusted OR [95% CI]</i>	<i>Univariate analysis Adjusted OR [95% CI]</i>	<i>Multivariate analysis Adjusted OR [95% CI]</i>
Gender				
Male	Ref	Ref	1.03 [0.9-1.2]	-
Female	1.24 [1.05 - 1.48] X ² -6.21; p=0.01	1.2 [1.02-1.4] X ² -5.01; p=0.02	Ref X ² -0.25;p=0.6	-
Socio-economic status				
Lower	1.5 [1.2-1.8]	1.4 [1.2 -1.7]	Ref	Ref
Higher	Ref X ² -20.7; p< 0.001	Ref X ² -16.4;p< 0.001	1.6 [1.4 - 1.8] X ² -55.9; p<0.001	1.4 [1.2 - 1.6] X ² -20.5; p<0.001
Province				
North Central	Ref	Ref	Ref	Ref
Uva	1.3 [0.8-1.9]	1.1 [0.7 - 1.7]	1.0 [0.6 - 1.6]	0.33[0.1 -0.9]
North Western	1.4 [0.97 - 2.06]	1.3 [0.9 - 1.96]	2.3 [1.6 - 3.6]	4.3 [2.5-7.2]
Northern	1.5 [1.0 - 2.2]	1.2 [0.8 - 1.8]	1.3 [0.8 - 2.0]	8.3 [3.6-19.3]
Western	1.8 [1.3 - 2.5]	1.6 [1.2 - 2.3]	5.5 [3.7 - 8.0]	5.5 [3.2 - 9.5]
Eastern	1.8 [1.2-2.8]	1.8 [1.2 - 2.9]	1.5 [0.96 - 2.3]	1.6 [0.96-2.8]
Sabaragamuwa	2.1 [1.4 - 3.2]	1.6 [1.03 - 2.45]	4.1 [2.7 - 6.3]	8.8 [4.8 - 16.4]
Central	2.5 [1.8 - 3.7]	2.7 [1.8 - 4.1]	4.8 [3.2 - 7.0]	7.0 [4.5 - 11.0]
Southern	4.0 [2.0 - 7.7] X ² -9.61; p=0.002	3.7 [1.8 - 4.1] X ² -11.6; p<0.001	4.1 [2.6 - 6.4] X ² -261.4; p<0.001	5.9 [3.2 - 10.8] X ² -85.23; p<0.001
Age Category				
40 - 49 y	Ref	-	Ref	Ref
50 - 59 y	1.2 [1.0 - 1.5]	-	1.7 [1.5 - 2.1]	1.97 [1.6 - 2.3]
60 - 69 y	1.1 [0.8-1.3]	-	2.4 [2.0-2.9]	2.8 [2.3 - 3.4]
≥70 y	1.2 [0.9 - 1.5] X ² -0.7;p=0.4	-	2.7 [2.2 - 3.3] X ² -134.7; p<0.001	3.1 [2.4 - 4.0] X ² -148.1; p<0.001
Residence				
Rural	Ref	-	Ref	Ref
Urban	1.2 [0.9-1.6] X ² -1.71; p=0.19	-	1.9 [1.7-2.3] X ² -57.1;p<0.001	1.3 [1.02 - 1.7] X ² -4.36; p=0.04

(Continued)

Variable	Reporting eye problem		Accessing treatment for eye problem	
	Univariate analysis OR [95% CI]	Multivariate analysis Adjusted OR [95% CI]	Univariate analysis Adjusted OR [95% CI]	Multivariate analysis Adjusted OR [95% CI]
Education				
≥Secondary	Ref	-	1.7 [1.4-1.9]	1.7 [1.4 - 2.0]
< Secondary	1.1[0.9 - 1.4] X ² -1.62; p=0.2	-	Ref X ² -54.4; p<0.001	Ref X ² -37.2; p<0.001
Marital Status				
Currently Married	Ref	-	Ref	-
Currently Unmarried/ Widowed	1.03 [0.84-1.26] X ² -0.09; p=0.8	-	1.1 [0.98 - 1.3] X ² -2.99; p=0.08	-
Ethnic Groups				
Sinhala	Ref	-	2.5 [2.1-3.0]	1.9 [1.5-2.4]
Tamils	0.7 [0.61-0.93]	-	Ref	Ref
Moors	1.2 [0.69- 2.02] X ² -2.41; p=0.1	-	2.0 [1.4 - 3.0] X ² -64.9; p<0.001	0.99 [0.5-1.8] X ² -6.4; p=0.01
Distance from health facility				
≤2 kms	1.03 [0.9 - 1.2]	-	Ref	Ref
> 2 kms	Ref X ² -0.11; p=0.74	-	0.65 [0.57 - 0.73] X ² -49.01; p<0.001	0.98 [0.83-1.15] X ² -0.06; p=0.8

Table 5. Accessing treatment in different eye complaints

Self-reported eye problem	N	Sought treatment n	%
Foreign body in eye/Injury	83	44	53.0
Dry eye	19	8	42.1
Pain in the eye	447	160	35.6
Problem with near vision	3703	1133	30.6
Problem with distance vision	1859	542	29.2
Watering	587	146	24.9
Floaters	18	4	22.2
Irritable, sore, burning eyes	754	161	21.3
Diplopia	6	1	16.7
Red eye with discharge	50	7	14.0

Distance to facilities and costs of transport were not major barriers to access service in this study. However, lack of time and someone to accompany participants to the facility was an issue, particularly for those with visual impairment. Fear of surgery was not an important barrier unlike in a previous study [14]. The chronic nature of many of the conditions experienced by patients over a long period of time may be one reason why eye care was not sought [21], as demonstrated in this study where persons with acute conditions like foreign body/eye injury, dry eye and pain had higher rate of seeking care.

Although Sri Lanka has an extensive network of primary care facilities, only secondary and tertiary care hospitals have equipment and trained personnel for specialist care, including eye care [22]. Our findings suggest that many non-visually impairing conditions, particularly near vision problems experienced by many patients can be managed by the primary level facilities

which provide care closer to the community and at affordable costs and this option needs to be considered. Primary level eye care, has been scaled up across Sri Lanka over the last few years, being a priority of the National Programme for the prevention of blindness (2013 to 2017) [23]. However the shortage of ophthalmologists and the lack of trained mid-level ophthalmic personnel, coupled with lack of diagnostic equipment at the primary level adds to the challenge of providing effective primary eye care.

Integration of eye health into primary health care provides an opportunity to improve access to eye care services at the community level [24]. Delays in presentation of potentially sight-threatening acute conditions like injuries and red eyes can be reduced by effective primary health care and a responsive referral system. Primary eye care encompasses the diagnosis, treatment and referral of eye conditions at the lowest level of the health system and is generally delivered by primary health care workers [24]. Unfortunately the skills of primary level personnel are often poor and basic competencies are also not achieved in many countries [25,26].

The strengths of the present study are the representative sample and the large sample size, which included all the districts in the country. The same interviewers, who were fluent in Sinhala and Tamil, the two main languages in Sri Lanka, collected all the data. Limitations are that ocular morbidity was not assessed in the younger population, and costs of specific eye care interventions were not obtained.

In summary, the study highlights the high prevalence of ocular morbidity in older adults as well as a high unmet need, particularly for conditions which require specialist eye care services (i.e. for refractive errors, cataract and presbyopia) or which could be managed at the primary level of service delivery (red eyes, itching/irritable eyes).

The recent expansion of primary eye care may help to address this need. A major challenge in accessing specialist eye care services was the cost that would be incurred, and approaches that reduce out of pocket expenditure for the poorer members of the community need to be considered.

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Conflicts of interest

All authors declare that they do not have any conflicts of interest.

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