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SUPPORTING VISION 2020: THE RIGHT TO SIGHT

THE ROLE OF OPTOMETRY IN VISION 2020

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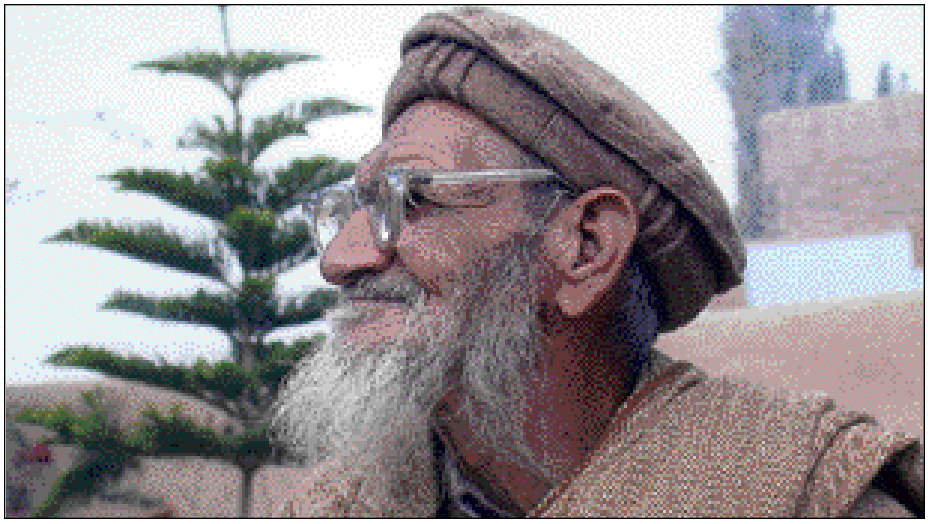

Vision restored!

Photo: Pak Sang Lee

The global initiative, *Vision 2020: The Right to Sight*, established by the World Health Organization (WHO) and the International Agency for the Prevention of Blindness,hascreatedvaluableandeffective collaborations of organisations involved in a wide range of eyecare and community healthcare activities aimed at the elimination of avoidable blindness and impaired vision.

Vision 2020's major priorities are cataract; trachoma; onchocerciasis; childhood blindness, and refractive error and low vision. These have been selected not only because of the burden of blindness that they represent but, also, because of the feasibility and affordability of interventions to prevent and treat these conditions.

It is only recently that uncorrected refractive error has achieved prominence as a major cause of functional blindness and significantly impaired vision, as a result of landmark population-based studies in adults, children and in post-cataract patients.

Apart from individuals who have taken an active role in the elimination of diseases such as onchocerciasis or have been in cataract teams, optometrists have had little opportunity to take part in the front line elimination of four of the major, preventable blindness-producing conditions targeted by *Vision 2020*. The realisation of the impact of uncorrected refractive error has provided the opportunity for optometry to play a major part in alleviating vision loss for those most in need.

The need to mobilise optometry to deal with uncorrected refractive error has been accompanied by the possibility of better integration of optometry into prevention of blindness in general, with some major benefits in areas such as:

- Teaching eye care personnel, especially in refraction and low vision care
- Providing screening and vision care services at secondary and tertiary levels

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Finding the Patients . . .

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- Detection and management of potentially blinding diseases such as cataract, diabetes and glaucoma
- Research into the understanding of global eyecare needs and solutions, especially in vision correction and vision care service delivery
- Building economic and logistical models of self-sustainable eyecare.

Impact of Uncorrected Refractive Error

Visually disabling refractive error affects a significant proportion of the global population, occurring in both genders, in all ages and in all ethnic groups.

The most common cause of visual impairment, and the second leading cause of treatable blindness,[1] uncorrected refractive error has severe social and economic effects on individuals and communities, restricting educational and employment opportunities of otherwise healthy people. The duration of the effect is also significant – refractive error can account for twice as many blind-person-years compared to cataract, due to the earlier age of onset.[2]

The need is very great for both children and adults. Studies have shown that refractive error in children causes up to 62.5% of blindness (≤ 6/60 in the better eye) in Chile,[3] 22% in Nepal,[4] 77% in urban India,[5] and 75% in China.[6] For visual impairment in children (≤ 6/12 in the better eye), refractive error is responsible for 55% in Chile, 86% in Nepal, 93% in China, 70% in rural India,[7] and 83% in urban India.[5] What is also disturbing is the amount of this refractive error that is uncorrected on presentation – 46% in Chile, 92% in Nepal, 58% in China, 86% in rural India. The burden even reaches to developed countries, with uncorrected refractive error causing 25% of all blindness (<6/60) in an Australian adult population and 56% of visual impairment (<6/12).[8]

The burden of refractive error is set to grow alarmingly due to an increase in myopia in both the developed and developing world, especially in urbanised East Asians, such as the Chinese populations in Hong Kong, Singapore and Taiwan. [9–11]

Refractive Error and Vision 2020

The impact and importance of uncorrected refractive error has now been recognised by *Vision 2020.* WHO established a Refractive Error Working Group (REWG), as part of global *Vision 2020* activities, in recognition of this important facet of internationaleyecare. TheREWGisnow developing international strategic plans and policies to eliminate uncorrected refractive error.

Eye examination by an ICEE optometrist in a remote location in East Timor
Photo: Brien Holden

Optometry's Role in Correcting Refractive Error

The good news is that while refractive error is amongst the most common causes of blindness and visual impairment, it is also the easiest to 'cure'. Refractive error can be simply diagnosed, measured and corrected, and the provision of spectacles is an extremely cost-effective intervention, providingimmediatecorrectionoftheproblem.

Throughout the world optometry has been the major provider of vision correction, but usually from a private practice setting. Public health optometry has not reached the communities that are in most need in any organised way. Despite this, on their own initiative, thousands of private optometrists worldwide have regularly visited communities in need to provide vision care and dispense spectacles. The opportunity now is for optometry to develop a concerted effort to create local capacity in these communities, in collaboration with its partners in *Vision 2020*, through service delivery, by creating human resources and by helping to develop the infrastructure needed, the three cornerstones of the *Vision 2020* programme.

What is Needed?

The way to eliminate uncorrected refractive error is through the development of all

these aspects of a self-sustaining system, including personnel to provide eyecare services; and spectacles, to correct vision.

Trained eyecare personnel
+ Affordable spectacles
= PEOPLE WHO CAN SEE!

In most developed countries the optometrist to population ratio is approximately 1:10,000. However, in developing countries the ratio is 1:600,000, and much worse in many rural areas, up to millions of people per optometrist. This lack of practitioners is the main reason for high rates of vision problems due to uncorrected refractive error in developing countries. The 'blindness' rate in many developing countries, especially in Africa, is 7 times higher, at 1.4%, than in developed countries.

In order to deliver good quality eyecare to countries where the need is greatest, there needs to be a steady but substantial increase in the number of eyecare personnel trained in refraction and vision correction. The current desperate situation in many countries cannot wait for advanced optometry to develop but requires optometry to take a major role in training mid-level personnel in refractive care. Whether it is the world's newest country, East Timor, or Ethiopia with its 70 million people, both without any optometrists, interim measures using nurse-refractionists or ophthalmic or optometric technicians that refract are essential.

Many make the issue of refraction and vision correction too simple. Why not just use subjective trial and error? The main reason is that it does not work. Children accommodate, myopia is overcorrected, and hyperopia is undercorrected. The second reason is that both adults and children will not wear spectacles that hurt their ears, look strange or 'strain their eyes' – even if they are free. It is a waste of time, resources and money to do it the wrong way. Doing it the right way means an accurate refraction (by a refractionist using either a retinoscope or refractometer) and the correct ISO/ANSI standard spectacles that are comfortable and attractive. Affordable spectacles can be provided easily through mass-distribution of 'ready-made' spectacles and the establishment of low-cost local laboratories for 'tailor-made' spectacles.

International optometry and opticianry have important roles to play in this task. Traditionally, these groups have been primarily involved in the private sector, generally looking after wealthier people in the community. But progressive leadership in optometry sees an ever-increasing role in the development of training and continuing education programmes for all levels of available eyecare personnel; in the establishment of infrastructure; in the development of effective models and programmes; in the delivery of eyecare services to meet community needs, and in the funding needed for the provision of training and low cost spectacles.

Optometry as Part of the Eyecare Team

In the first Planning Meeting of the Informal Group on Refractive Error, the participants endorsed 'the inclusion of the correction of visually disabling refractive error as a component of the Global Initiative for the Elimination of Avoidable Blindness - *Vision 2020: The Right to Sight*', and 'emphasised the need to deliver refraction services as an integral part of general health care systems and comprehensive eyecare'. [12]

The need for glasses is also a public eye health opportunity not to be missed. Refractive care provides excellent access to the population for screening of more serious eye problems, such as cataract and diabetes. Primary care screening by optometrists and eyecare workers, with optometrists taking care of the more immediate interventions required, and referral for more 'complicated' care, is 'classical' health care delivery.

One effective current model, developed by the LV Prasad Eye Institute in Hyderabad,India,fortheefficientandcost-effective delivery of eyecare is a community eyecare 'team'. For every 1,000,000 people the team has:

- 1 ophthalmologist
- 4 optometrists
- 8 eyecare workers
- 8 ophthalmic assistants
- 16 ophthalmic nurses.

The Role of Research

As the previous statistics show, there is a significant problem to be faced in addressing uncorrected refractive error. But understanding the scope of the problem, and most importantly, planning how to solve it, requires much more information than these simple numbers. Adequate prevalence data are necessary to determine the regions, population groups and age cohorts most in need of intervention, and, also, to provide the basis from which interventions in the future can be evaluated.

As part of the front line of the eyecare team, optometry has a role to play in research as diverse as the aetiology of the epidemic of myopia in East Asia, to collecting the data needed to design effective eyecare interventions, both in refractive error and for other eyecare needs. Optometry can significantly contribute to the understanding of:

- Worldwide blindness and impaired vision – the burden and its effects
- Health care planning
- Service delivery
- Outcomes of intervention.

Refractive Error Study In Children

A series of studies around the world have begun to fill in the gaps in our knowledge of the burden of blindness and impaired vision in children caused by refractive error. The studies address the variation of refractive error with age, gender, race and geographic region, the extent to which it is being corrected, and how the prevalence is changing over time. The Refractive Error Studies in Children (RESC) have so far been conducted in Nepal, China, Chile and India, using population-based, cross-sectional sampling, consistent definitions and a common methodology. ICEE is currently conducting the RESC study in KwaZuluNatal,SouthAfricainconjunction with the National Eye Institute and WHO, and sponsoredbyCBM International, Sight Savers International and ICEE. At the completion of the African study, data will have been collected on approximately 30,000 children worldwide.

Self-Sustainability, Refractive Error and Optometry

Two other important contributions that optometry and the optical industry can make to the worldwide fight to eliminate avoidable blindness and impaired vision due to refractive error are:

- Developing the logistics and economics of self-sustaining eyecare at the community and institutional levels
- Mobilising worldwide resources to develop models and create the educational and delivery infrastructure for refractive and general vision care.

First, optometry and opticians need to pass on knowledge of the logistics, supply systems and economic management that is done so well in private practice, to public health programmes. Thus, spectacle supply can effectively fund more expensive or intensive needs such as low vision and cataract surgery. An important part of practical and cost-effective eye care systems to communities in need is the understanding that it does not make sense to bring 50% of

Bifocal spectacles make a difference in Jamaica

Photo: Murray McGavin

the population that require refractive services into a hospital setting for refractive care. It makes much more sense to screen, refract and supply spectacles and vision care, including the detection and treatment of minor problems, and referral of those with more serious problems, at the community level. Optometry can make a major contribution in supporting eye care at this more convenient and cost-effective level.

Second, the global spectacle industry and optometrists and ophthalmologists who serve the private sector probably generate total revenues of over $100 billion. It would be a powerful statement of professional and corporate responsibility if 0.1% of this amount found its way back to help those most in need.

Conclusion

It should not be necessary for any child to struggle in school, to learn with an uncorrected refractive error. Nor should any older person be called upon to spend thirty or forty years without glasses, to see to read or sew or to manage a job. Optometry and the optical industry in its broadest sense should be able to find the financial resources to give this simplest gift of sight.

Preventable blindness is one of our most tragic and wasteful global problems. Optometry is an essential part of the team that will eliminate this tragedy, by understanding global eyecare needs and delivering effective and sustainable vision care to people in need, thereby ensuring their fundamental right to sight.

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Case Finding for Refractive Errors: Assessment of Refractive Error and Visual Impairment in Children

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The World Health Organization informal planning meeting, in July 2000, clearly indicated that detailed comparisons of refractive error prevalence across study reports are generally not possible because of different measurement methods and definitions.[1] Further, because most studies are carried out using samples of unknown representativeness, interpretation of the findings in a population-based context has problems.

RESC Studies

An exception to this difficulty is a series of population-based surveys of refractive error and associated visual impairment in school-age children conducted in five different geographic regions using a common protocol – the Refractive Error Survey in Children (RESC).[2] These RESC surveys, which began in 1998, were carried out in a rural district in eastern Nepal;[3] a rural county outside of Beijing, China;[4] an urban area of Santiago, Chile;[5] a rural district near Hyderabad in southern India;[6] and an urban area of New Delhi in northern India.[7] A sixth survey is currently being carried out in Durban, South Africa. Others are planned.

In each survey, population-based samples of approximately 5000 children, aged 5 to 15 years, were obtained through cluster sampling. Clusters were defined in rural areas using village boundaries, and in urban areas community blocks or wards were used. The sample size was designed to obtain reasonably accurate prevalence estimates at age- and sex-specific levels.

Clinical Measurements

Enumeration of children within the randomly selected clusters in each study was followed by clinical examination at one or more sites within the community. The examination included measurement of distance visual acuity using an illuminated LogMAR 'E' chart, near and distant, ocular motility evaluation with a cover/uncover test, cycloplegic dilatation with cyclopentolate, streak retinoscopy, autorefraction with a handheld Retinomax K-Plus, subjective refraction for those with unaided visual impairment, and slit - lamp and direct ophthalmoscope examination of the lens, vitreous, and fundus. A principal cause of visual impairment was recorded by the examining ophthalmologist for each eye with visual acuity of 6/12 or worse.

Comparative Findings

Uncorrected visual acuity < 6/18 in the better eye ranged from 0.46% to 3.25% (Figure 1). With presenting vision — aided vision for those wearing glasses — the prevalence of visual acuity <6/18 in the better eye ranged from 0.42% in Nepal to 1.79% in China. With best corrected visual acuity, visual impairment was substantially reduced, ranging from 0.09% in China to 0.28% in rural India. The difference between presenting and uncorrected vision reflects the amount of refractive error that is already corrected, while the difference between presenting and best corrected vision indicates the extent to which uncorrected refractive error remains as a vision disabling problem. The prevalence of visual impairment with best refractive correction represents the degree of vision loss attributable to causes other than refractive error.

Better vision with spectacles for this child in Uganda

Photo: Murray McGavin

Although some of the refractive error underlying clinically significant visual impairment was found to have been already corrected with spectacles, an essentially equal amount of *correctable* refractive error remained uncorrected (Figure 2). This was the case in all five study areas, which were generally representative of lower and lower middle class populations in each country.

Refractive error in this age group was usually due to myopia with a relatively high prevalence among Chinese children (Figure 3). Although the relationship between uncorrected visual acuity and refractive error was not a precise one, among those with a relatively high prevalence of visual impairment, correspondingly high amounts of refractive error were

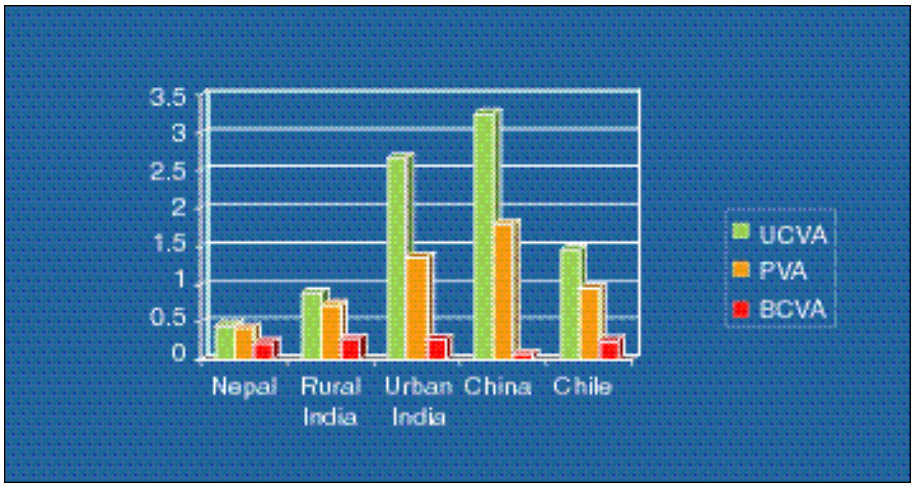

Fig. 1: Percentage prevalence of visual acuity < 6/18 in the better eye. UCVA: uncorrected visual acuity. PVA: presenting visual acuity. BCVA: best corrected visual acuity.

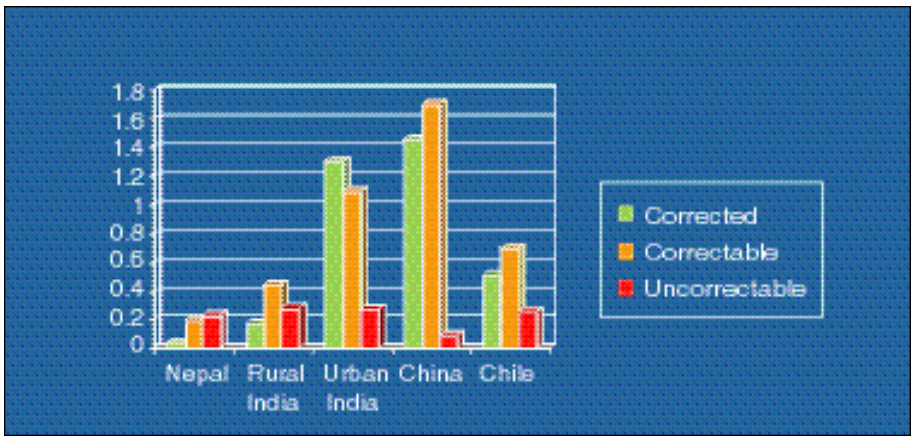

Fig. 2: Percentage prevalence of visual impairment < 6/18 in the better eye. Corrected: already corrected visual impairment. Correctable: uncorrected, but correctablevisual impairment.Uncorrectable: uncorrectable visualimpairment.

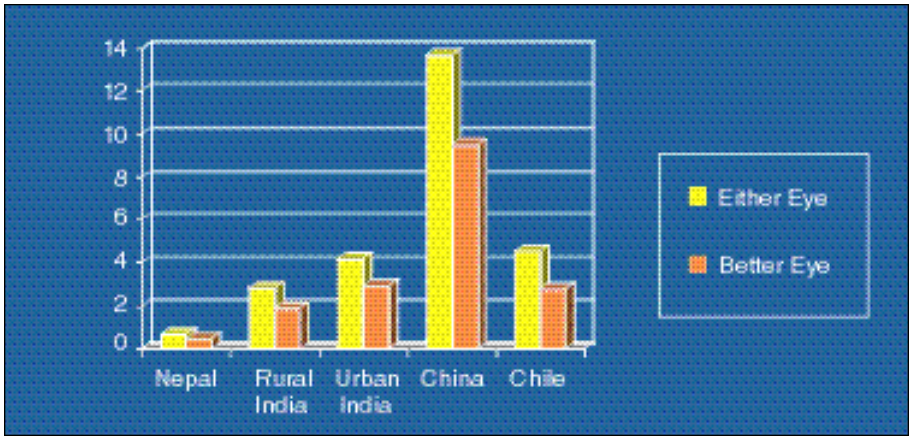

Fig. 3: Percentage prevalence of myopia: -1.00 spherical equivalent dioptres in either eye (worse eye) and better eye as measured with cycloplegic autorefraction.

found, as expected. The prevalence of hyperopia (hypermetropia: + 3.00 spherical equivalent dioptres or more in either eye) was found to be particularly high in Chile, 5.55%, and was accompanied by comparatively high levels of astigmatism as well (data not shown). Further information regarding the age- and sex-specific prevalence of both myopia and hyperopia is available in the original reports.[2-7]

Recording visual acuity in Zanzibar
Photo: Murray McGavin

Conclusion

These comparative studies illustrate that the prevalence of myopia and hyperopia varies considerably across geographic regions. They also illustrate that visual impairment, which in this age group is almost entirely because of correctable refractive error, will vary in a corresponding fashion. Unfortunately, it appears that approximately half of the visual impairment associated with easily corrected refractive error remains uncorrected – at least among school-age children in lower and lower middle class populations. To the extent that these data represent children across different geographic and ethnic origins, as well as different cultural settings, reduced vision because of uncorrected refractive error is an important public health problem. Cost-effective strategies are needed to eliminate uncorrected refractive error as a cause of disabling visual impairment, particularly during the formative years of children.

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Case Finding in the Clinic: Refractive Errors

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The detection of refractive errors includes effective screening programmes in the school or community. However, the lack of human and other resources often prevent such programmes from occurring. Therefore, patients with many conditions, both refractive and non-refractive, present at clinics. The separation of these patients into refractive and non-refractive conditions is important in the good organisation of eye care clinics, as members of the eye clinic team can then carry out their different duties more effectively.

General Considerations

Refractive error can be detected through the routine examination of patients who present to clinics, or through vision screening of the population at large.[1] An added component is the screening of patients in the clinic setting and combining this with the eye examination. This process will thus incorporate a case history, visual acuity, pinhole visual acuity, retinoscopy and a subjective examination.

Complaints of frontal headaches, poor concentration in school, inappropriate viewing distances, presence of tropias (eye-turns), tilting of the head (high cylinders), and 'squinting'/peering are indicators of refractive error. The pinhole occluder assists in determining the best visual acuity possible with a refractive correction. History combined with visual acuity tests and visual acuity through the pinhole, should enable the clinician to determine if refractive error is the cause of the patient's problem. [2]

Retinoscopy is an effective tool in determining the presence of refractive error in adults. Retinoscopy with cycloplegia is the most appropriate method of determining refractive error in children, given the accommodative status of children.[3]

A subjective refraction should include a binocular balancing technique and a full eye examination to detect other ocular abnormalities.

Detecting Refractive Cases

Patients referred from a screening programme

If the vision screening programme is known to have been established through proper protocols and training of staff, then the patients should be accepted in the clinic on the basis of the preliminary findings and a full refractive examination conducted. However, many screening programmes are incomplete, only using visual acuities and not a pinhole or +2.00D lens to detect latent hyperopia (hypermetropia). Such patients should be managed in a similar way to the self-presenting patients.

Patients not screened/self-presenting

Primary Level

Adults

All patients should be tested using a Snellen acuity test (E Chart) at distance. Those with <6/6 vision should then be further tested with a pinhole test. Should the vision improve to 6/6 then the patient is classified as having a refractive error. Those patients with no improvement to 6/6 with a pinhole, are classified as non-refractive and referred to a secondary level for a full eye examination.

Patients with a Refractive Error

1. Adults over 45 years of age

The Refractive Error Working Group (REWG)[1] recommends that patients with a distance acuity of 6/18 or better (binocularly) should be provided with reading glasses for near. Patients with a visual acuity less than 6/18 should be referred to the secondary level for a refraction.

Patients with specific occupational demands may also need to be referred to the secondary level for a full eye examination.

2. Adults less than 45 years of age

These patients will fall into the early presbyope or pre-presbyope category.

Should there be no occupational demands, patients with 6/18 or better (binocularly) need not be referred for a refraction while those with occupational demands should be referred to the secondary level for a full eye examination. Patients with 6/18 and better but with near occupational visual demands should be dispensed presbyopic glasses ('readers').

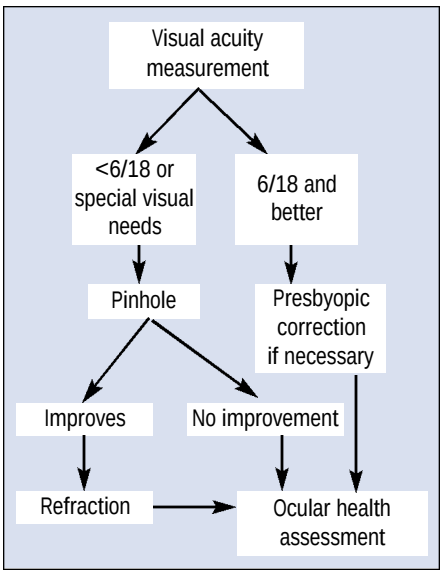

Fig. 1: Screening Adults in an Eye Clinic

3. Children

The REWG recommends that children be referred for refraction should they have a binocular visual acuity less than 6/12.[3] They should be referred to the secondary level for a full eye examination (including a cycloplegic refraction).

Secondary Level

Many patients present directly to the secondary level clinics, a consequence of which is an unnecessary increase in patient numbers.

Ancillary personnel (clinic assistants) should screen patients and determine the appropriate management – prior to seeing the Eye Care Practitioner (ECP) – utilising:

- Snellen acuity (E Chart)
- Pinhole test for those with <6/6
- History – to determine age and symptoms
- Visual acuity with a +2.00 D lens for children.

Who is Referred for Refraction?

1. Adults

- All patients failing the Snellen acuity test, improving to 6/6 with the pinhole test but with less than 6/18 binocularly (Figure 1)
- Patients complaining of headaches and with decreased visual acuity that is improved with a pinhole

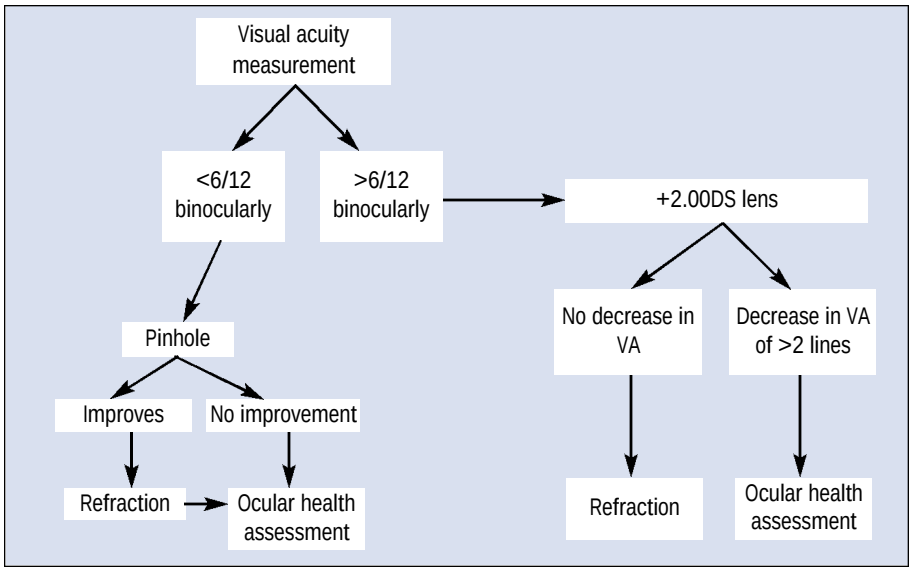

Fig. 2: Screening Children in an Eye Clinic

- Patients with occupational and special needs experiencing better visual acuity with the pinhole
- Patients who are presbyopic.

2. Children

- All children failing the Snellen test (<6/12 binocularly) (Figure 2) but improving with the pinhole test
- Children with better than 6/12 vision but with no blurring of vision with a +2.00D lens
- Children who present with symptoms consistent with refractive error
- Children with tropias.

Screening: False Referrals

Given the percentage of false referrals, children referred for ocular disease evaluation should be referred from the ECP for refraction should no ocular disease be detected.

Malingerers

Malingering could indicate behavioural and other problems or just a desire to wear spectacles and be like parents or friends.

Children failing the Snellen test and showing no improvement in visual acuity could, in fact, be malingerers. Retinoscopy, with cycloplegia, is the best method to determine if a refractive condition exists.

The REWG recommends that children be considered myopic or hyperopic based on the following criteria:[3]

- Myopia: ≤ -0.50D
- Hyperopia: $\geq +2.00$D

Tests for malingering may also use the following techniques:

- Put plano lenses into the trial frame and observe any improvement
- Move the child closer to the chart and then take visual acuity. No improvement indicates malingering.

General Comments

Children with binocular vision of 6/12 or better, with a visual acuity difference between the two eyes of more than two lines on the chart, should be referred for a refraction as amblyopia is a consideration.

If patient numbers are low, the screening protocol could be applied for all patients attending the hospital or clinic, not just the eye clinic patients.

Conclusion

There is great variation in the availability of resources from region to region and country to country. Should the appropriate resources exist then consideration should be given to the 'lowering' of the referral criteria.

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Review Article

Case Finding in the Community: Experience of Jatiya Andha Kallyan Somiti in Comilla, Bangladesh

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Bangladesh, one of the largest and most densely populated countries of the world, has a population of 130 million, with 80% living in rural areas. The National Blindness Survey, 1999-2000, indicated that the prevalence of blindness in the adult population aged 30 and above is 1.04%, of which more than 85% is due to cataract. Eye care services, either Government or private care, are not available to the people of rural areas due to inequitable distribution of services, physical and geographical inaccessibility and financial limitations. Jatiya Andha Kallyan Somiti, Comilla, Bangladesh has developed comprehensive eye care services with financial and technical assistance from Sight Savers International (SSI) and has been providing the following modules of services, beginning in 1994.

New spectacles!

Photo: Murray McGavin

Module -1: Hospital Surgery
Module -2: Eye Clinics
Module -3: Under – 5 Clinics (1996–2000)
Module -4: Community and Patients' Screening Programme Activities
Module -5: Community Based Rehabilitation (started in 2000)

Currently, only a few District Hospitals in Bangladesh provide eye care services, whereas the need is incredible. Present data on blindness in Bangladesh, taken from the National Blindness Survey, 1999-2000, indicate that the causes of blindness in people aged 30 and above are as follows:

How Community Eye Care Services were Planned

Understanding the fact that most people live in rural areas where the services are either scanty or absent, the eye care programme of Jatiya Andha Kallyan Somiti was developed in such a way that the rural population could have easy access to quality services. The following were the major planning principles:

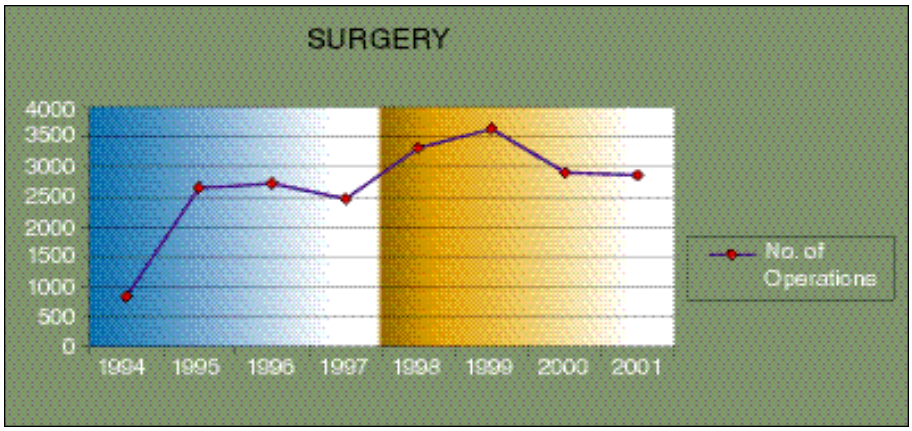
- **Efficiency**: Maximum utilisation of limited resources available to Jatiya Andha Kallyan Somiti, Comilla, Bangladesh, reducing wastage, and avoiding duplication
- **Effectiveness**: Developing the best course of action to accomplish the project goals and objectives in the light of social needs in rural Bangladesh
- **Quality of care**: Offering the best standard of care possible in Bangladesh
- **Equity**: Well distributed services and at a cost that people can afford.

From the above planning principles it is clear that there are two major areas in this eye care work:

- Awareness raising
- Patient screening programmes and surgical interventions.

Both of these require active and strong community participation.

In our Modular Eye Care (MEC) Programme we have successfully encouraged community participation in various ways. Community participation has not only allowed us to achieve our objectives, it has also achieved a significant and sustainable impact through our work, by creating informed communities who are aware of eye health care.



Background to the Modular Eye Care Programme

Before our Modular Eye Care Programme was launched, Sight Savers International funding was available for eye camps in the community, where cataract operations where performed in rural areas. Programmes generally did not educate people, particularly the clients, on follow-up care; what to do in case of emergency, for example, in respect of infection and communicable eye disease; how to prepare a balanced diet with cheaply available vitamin-A rich food for their children, or how to develop a kitchen garden to grow nutritious and vitamin-A rich food stuffs, etc. All the ophthalmologists were urban based, and so eye care in rural Bangladesh was in the hands of traditional healers. They used to provide treatment for cataract through couching which caused blindness for many helpless and poor people.

The other groups active in the field were service clubs, many of which held eye camps on a commercial basis. The poor, rural cataract patients were the worst affected, as much of the cataract surgery was sub-standard. Most damaging was the absence of post-operative services for the patients operated on in eye camps and many became blind due to post-operative complications. We have treated many eye camp patients like this at our Hospital's outpatients' department (OPD).

The provision of post-operative care for the patient is not only essential for good service delivery, it must also be viewed as an individual human right. Eye camp organisers generally did not offer proper post-operative care. Why was this the situation?

- People were not properly advised or educated
- They were not aware of their needs
- They were not informed as to how they should maintain their eye health
- People are poor and totally unaware of their rights.

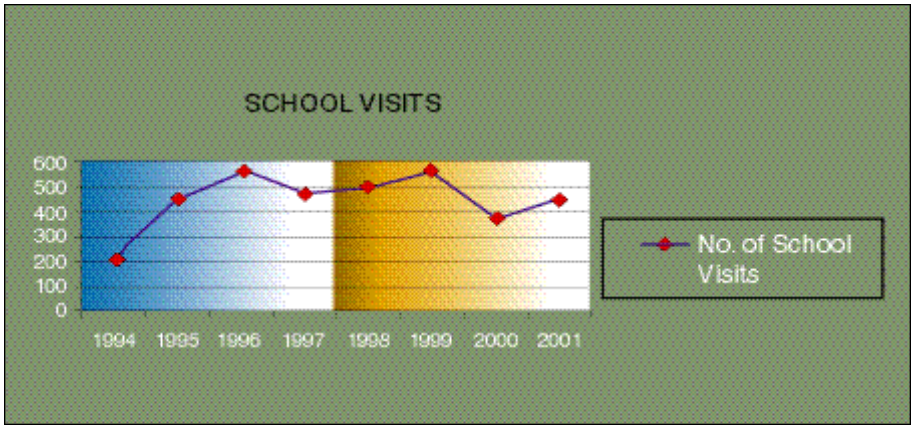
There are several other reasons why we need to educate poor communities about eye health care. Therefore, the need for community participation and education can never be underestimated. It is interesting to note, in this context, that people do not spontaneously access the facilities even if these are taken to their doorsteps.

Community Level

1. ***What are the services?***

Awareness raising activities:

- Informing the community about preventive eye care
- Informing the community about service provisions
- Referral for treatment.



Motivational activities:

- Encourage the utilisation of eye care facilities
- Remove fear about surgery
- Offer IOL implantation
- Establish linkages (and referral) with service facilities.

2. *Who will deliver the services?*

- Health Assistants
- Family Welfare Assistants
- Others (NGO workers).

3. *How should the services be delivered?*

Health Assistants:

- Group counselling during EPI (Expanded Programme of Immunisation) and 'diarrhoea' camps
- Interpersonal counselling
- Flip chart.

Family Welfare Assistants:

- Group counselling during door to door visits
- Interpersonal counselling
- Flip chart.

4. *What are the training needs?*

- Orientation about primary eye care needs
- Dissemination of information about eye care
- Motivational techniques.

Community Services

PSP: Patients' Screening Programme (Outreach Clinics)

- Organise and conduct PSPs at pre-planned venues within the programme district
- Offer treatment to patients with minor eye problems
- Identify patients who need surgical services and refer them to the Base Hospital for surgery.

The total number of patients treated from 1994 to 2001 was 453,220 – as outpatients at the community level. The total number of operations done during the same period was 21,452. Of these, about 99% of cases were for cataract surgery.

During 1994-1995, a Medical Officer visited each satellite centre once a week. There were two Community Workers in each satellite centre. Gradually we felt the need of earlier intervention to prevent blindness, by serving the under - 5 children in the satellite centres. In late 1995, we decided to change our programme and include under - 5 clinic services. From the beginning of 1996 we posted a permanent medical team in each satellite centre and our Medical Officer started attending the centres 6 days a week. Unfortunately, we have not been able to continue with satellite centres beyond 2000. However, we are continuing the PSPs in 10 Districts and through this we offer services to 9 million people.

School Sight Testing

- Conduct sight testing programmes in all schools within the community in order to identify children with refractive errors and refer them to the PEC centre/ MEC base for treatment/ surgery
- Disseminate health and eye care knowledge among the school children
- Motivate school teachers to act as volunteers - to make the community aware of the services offered by the MEC programme and encourage them to use the services.

In school sight testing programmes we tested about 192,384 students and 11,914 students were referred to patient screening programmes (PSP), mainly for the correction of refractive error.

The school teachers were only familiar with EPI for the children. They had no idea about the need of sight testing and primary health and eye care knowledge. After hearing about blindness prevention activities from our community organisers, the teachers have gradually shown interest in our programmes. It is gratifying to note that now the teachers are inviting us to give more lectures and conduct sight testing programmes.

Counselling Sessions, Community Group Meetings and Other Activities

- Organise and conduct discussion, motivation and counselling sessions for the people/ patients at the OPD of the Base Hospital and Rural Centres
- Organise and conduct village/community level group meetings in order to disseminate information on eye health care, general health care, food, nutrition, etc., and for better health care and motivation of people to use the eye care services
- Develop a trained volunteer core in the rural community as auxiliary forces to stimulate community participation and supplement work in the community
- Networking with local community groups, e.g., literacy classes for women.

In our country, people are used to attending meetings for political, religious or credit programmes. They had never thought of eye care group meetings. Initially they were unwilling to come to the counselling sessions and tried to avoid them. Soon, however, they realised the importance of eye care messages given in the sessions and were actively working to organise more sessions in the villages. It was also observed that the women were shy to attend such meetings. The personal and effective motivation by the PEC organisers encouraged village men and women to show interest in the group meetings. The flip chart on primary eye and health care, prepared for use in the group meetings, also broke the monotony of the lectures delivered by the workers. In many cases, established community groups, organised for rural micro-credit schemes, were utilised to save time and avoid duplication of effort where possible. In some cases we were supported through the help of Ansars (cadre of auxiliary security forces) and village defence police (volunteer core organisation). They required training in basic knowledge of eye care.

A total number of 126,887 people attended these meetings to improve awareness about eye care.

Conclusion

Motivational work is required to increase the accessibility of services to the rural people. Who will do it? Can an 'outsider' (not belonging to the community) do it? It is not possible. This requires community help and intervention by the community leaders. Those people who are unwilling to access the services, inmost caseswill listen to their community leaders. In our experience, therefore, the most effective way to improve accessibility for the people is the intervention of the community leaders.

☆ ☆ ☆

Technology for Eye Care: Training in the Care of Equipment and Instruments

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Aravind Eye Care System
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India

A training session

Photo: Photography Department, Aravind Eye Hospital, India

Modern health care, eye care especially, is very much dependent on the use of technical equipment and instruments. These are expensive, more so in developing countries. Much of the quality equipment and instruments are made in developed countries and, even with normal and careful use, are subject to wear and tear. It is important to take good care of them and employ preventive maintenance to keep them working at all times. The 'down time', if any, during which an instrument or equipment is not working should be reduced to a minimum.

We seek to answer the following questions by sharing our experience at Aravind Eye Care System in Madurai, India.

- ***How can these objectives be achieved?***
- ***Which methods will achieve these standards?***
- ***Who can carry out these tasks?***

Maintenance, Methods and Tasks

1. **Understanding the correct use of the instrument**. Instruments manufactured by well-established manufacturers and marketed by equally established suppliers are generally well made and strong. They seldom fail when used properly and with care. When instruments fail there is always some reason for the failure. Knowing how or why a failure has occurred is an important maintenance task. Without knowing the cause of a failure it will not be easy to fix it. Reading and understanding the user manual that comes with the instrument is essential for this task.
2. **Understanding the limitations of the instrument**. Every instrument, by its design and construction, has some limits to its operations. Some can handle only a certain load at a time. Some can work only within a certain speed. Some have certain limits relating to environmental conditions (temperature, humidity etc.) for proper functioning. Some have certain limits of mobility when in use. It is important that these limits are well understood and remembered when the instrument is used. Instruments should, as far as possible, be used only within the prescribed limits of operation. Using an instrument to its maximum limit should be more an exception than a rule.
3. **Carrying out preventive maintenance**. In health care it is well understood that prevention is better than cure. This also applies to both instruments and equipment. Periodic preventive maintenance is needed for trouble free performance. This includes protecting them from dust and stain, and checking and lubricating all moving parts to ensure smooth movement. It is vitally important to ensure that there is no 'kink' (bend) or obstruction in the tubes and valves of equipment that use some flow of fluid. The various other preventive maintenance tasks, specific to each piece of equipment, are explained in the user manual which should be read and the instructions carried out.
4. **Replacement of spares**. Almost all items of equipment have certain parts that have a finite life. The bulb in instruments may be fused out ('blow'). The electric fuse may be blown off. The belt, springs or wheels used to drive some part of the equipment may snap off or become loose or may be displaced or may be exhausted. An adequate stock of all spares is always required. Identifying faults and defects and knowing how to restore good function is important.
5. **Care of electrical parts**. Almost all equipment uses electricity for operation. Simple electrical faults external to the equipment, like a damaged plug or switch, a short circuit or discontinuity in the connecting wire are not uncommon. Locating those defects and rectifying them is another maintenance task.
6. **Care of optical parts**. Many pieces of equipment used in eye care have lenses, mirrors, prisms, reflectors, etc., which have surfaces of high optical quality and some of the surfaces may also have special coating for specific needs. Protecting those surfaces from dust and stains and removing dust and stain without causing any scratch or any damage to the coating is an important part of preventive maintenance.
7. **Aligning optics**. Even slight displacements of the positions of optical components affect the quality of the images seen when using them.
8 **Care of surgical instruments**. Taking care of the surgical instruments, sharpening the edges when necessary and repairing them when damaged are essential.

Who can carry out these tasks? A qualified bio-medical engineer can probably do all these. However, such persons are not readily available, especially in developing countries. The tasks require a wide range of skills but the technology required is not very complex or difficult. Our experience is that an assistant in an eye hospital (perhaps an electrician, an ophthalmic nursing assistant or a refractionist), who has some interest in working with his/her hands, can be trained to do all the above tasks and even more.

Selection of Technicians

At Aravind we recruit polytechnic graduates. They have two or three years of engineering education and training beyond high school. With some extra on-the-job training in our instruments maintenance laboratories they are able to carry out all the tasks described above and also teach others. We have found from our experience that women will often do a better job then men! Technicians at Aravind also make spare parts for some instruments and are also encouraged to build simple equipment used in eye care.

Equipment and Instruments: Maintenance Courses

The six-week maintenance courses run in LAICO (Lions Aravind Institute of Community Ophthalmology), Aravind Eye Care System, Madurai, India aims to teach the skills needed for equipment and instruments maintenance. The courses have been organised since 1996. As of this date, we have conducted 27 such courses, training 151 technicians, including 20 women. Thirty-seven technicians (almost 25%), including 2 women, are from 14 developing countries outside India - Jamaica, Ghana, Nigeria, Uganda, Kenya, Malawi, Zambia, Zanzibar, Pakistan, Philippines, Nepal, Papua New Guinea, Indonesia, and Bangladesh.

A technician making a spare part (bulb of a slit-lamp)

Photo: Photography Department, Aravind Eye Hospital, India

Equipment and Instruments: Maintenance Camps

Towards the end of each training course the trainees, accompanied by some of the instructors, spend a few days in a hospital outside the Aravind Eye Care System and run a free maintenance camp. Such camps benefit the trainees who come across different types of equipment and instruments with different problems. The host hospital benefits because their needs in maintenance are taken care of by the trainees.

One important feature of the Madurai courses is that the trainees are supplied with a set of hand tools so that they can start their work immediately, on reaching their hospitals after the training. We have received good reports of the work of several of the technicians trained at Madurai.

Visual stimulation equipment for a child who is not 'fixing' on a light source

Photo: Photography Department, Aravind Eye Hospital, India

Technician Trainer's Course

Following the basic six-week course, we offer a trainer's course. Persons taking up this training will be able to organise similar training courses in their own work places. The West African Health Community has taken advantage of this and three technicians from that region underwent the trainer's course. With these technicians and two more technicians trained in earlier years as additional hands, a training centre was established in Nigeria. Two persons from Aravind were invited to Nigeria to take part in their first training course run in September-October 2000. Subsequently, the West African team has run two more courses. One of the technicians from Nigeria has established a maintenance facility in his home town, servicing ophthalmic and other medical instruments and employing others. A technician from Pakistan, trained in Madurai, is running a technician training course in his country.

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Footnote

The April 2002 issue of *Scan Optics News* (Volume 5, Issue 1) records names of technicians from Africa who attended a service course run by *Scan Optics* for the maintenance of surgical microscopes. Of most interest to us at Aravind Eye Care System is that while most of the persons mentioned were trained at Madurai, the rest were trained in one of the three training courses in West Africa, run by Aravind trained trainers.

COURSES AT ARAVIND EYE HOSPITAL MAINTENANCE OF OPHTHALMIC SURGICAL INSTRUMENTS AND OTHER EQUIPMENT

Lions Aravind Institute of Community Ophthalmology, Aravind Eye Hospital, Madurai 625020, India, offers **six week courses** in the maintenance of ophthalmic surgical instruments and other equipment. There is a trainee-trainer ratio of 1:1. Trainees are also introduced to the principles of maintenance management.

Four courses are run each year beginning on:

1st February : 1st May : 1st August : 1st November

These courses are also open to technicians from organisations engaged in sales and service of ophthalmic instruments.

Course Fees: US $325 for essential tool kit
US $75 for shared accommodation

Trainees may have meals in the doctors' facilities on payment.

For information please contact:

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Management and Planning for Primary Eye Care of the Elderly: the Need to Create Public Awareness of Age-related Cataract in Pakistan

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Introduction

This article focuses on the significance of management and planning for primary eye care for the population aged 60 and over, in Pakistan. It takes the case of age-related cataract and highlights the importance of creating public awareness about cataract in terms of the respective roles of health planners, policy makers and service providers.

The Challenges of Managing Elderly Health Care

The highest uses of health services – and most deaths – occur in the older age groups.[1] A number of disabilities are also found in old age. Among the common causes of disabilities are nutritional and dental problems, arthritis and rheumatism, hearing loss, high blood pressure, mental health problems, fractures, cardiovascular, respiratory and digestive disorders – and visual impairment. Management of eye care in the elderly is not simple. Elderly people are usually cautious and conservative.[2] They are vulnerable and take fewer risks regarding treatment, in comparison with the younger population.

Age-related Cataract in Pakistan

Age-related cataract is the most common cause of blindness in Pakistan. The fact that cataract is treatable makes it vital that the public becomes aware of its nature and potential problems. Doctors are also required to adopt modern approaches and practices regarding the management of this condition. We carried out a study at the Khyber Teaching Hospital, Peshawar, Pakistan to assess the magnitude of the problem and the level of awareness amongst the public and also among doctors themselves. A random sample of 100 patients, aged 60 and above, who visited the eye outpatient department was taken during the months March and April 2001. This study clearly revealed that age-related cataract was the major eye problem of old age in the region (Table 1). It showed that, among the elderly, the incidence of age-related cataract was higher in the poor economic category (Table 2). It also indicated that the elderly population suffering from eye conditions had social and emotional needs, which are equally important for consideration by the service providers.

An informal effort was also made to determine the doctors' approach and awareness and we were surprised by a number of misconceptions about age-related cataract.

Common Misconceptions

Most of the patients thought that they must wait until the cataract is mature before cataract surgery takes place and if an immature cataract is operated on it will damage the eye. We heard many doctors telling their patients: 'Your cataract is not yet ready for an operation – come after a few months when it is mature enough and only then shall we operate on your eye'. This practice has led to practical blindness for many patients, resulting in surgery only when their vision has deteriorated to hand movements or perception of light.

Hypermature cataract

Photo: Murray McGavin

Another misconception is about intraocular lens implantation. To our surprise, there were some patients who thought that the intraocular lens has to be changed every year – which would not be affordable and quite impractical for them.

Yet another group of patients believed that cataract is a contagious disease.

It was also observed that if a member of the family has had failed cataract surgery, the rest of the family strongly believe that such surgery would always result in failure. Some patients said that their father, or mother, had had cataract surgery but there was no improvement in vision. The relatives of these patients, who had developed post-operative endopthalmitis and resultant phthisis, were never ready to be operated on for cataract. Also, when cataract surgery has poor results because of missed underlying eye disease, the general public loses confidence in the surgery.

Some patients find it difficult to practice 'precautionary measures', which according to their beliefs is understood as 'rest as much as possible and for several months'. Some reported that they did not take a bath for a whole month after their surgery, because they believed that the intraocular lens could 'fall down' in the process.

How to Create Public Awareness

The elderly are normally sensitive and sometimes emotional and not ready to accept new concepts or take risks. Effective public awareness demands very

Table 1: Distribution of Eye Conditions

Total cases	Age-related cataract	Infections	Diabetic retinopathy	Hypertensive Retinopathy	Trauma	Others
100	77	5	3	2	1	11

Table 2: Age-related Cataract and Economic Status

Total number of age-related cataract patients	Poor financial status	Satisfactory financial status
77	47	30

careful planning and management by the government, NGOs and good service delivery. Campaigns, including effective use of the media, are most important. Traditional practices and beliefs have to be replaced by modern concepts and techniques.

There are good examples of public awareness campaigns in Pakistan that have proved successful, including campaigns relating to iodine deficiency disorders and mass polio vaccination. If age-related cataract is handled in the same way we can anticipate meeting the challenges of Vision 2020: The Right to Sight.[3]

Comment

There are only a few voluntary organisations which are working for the elderly in Pakistan. Some are working in the prevention of blindness, irrespective of a particular age group. To align and enhance their efforts, multi-sectoral and inter-sectoral approaches should be adopted; involving communities, Government, the NGOs (operating at national and international levels), voluntary workers and service providers. All must collaborate to create public awareness regarding age-related cataract. To design campaigns regarding such awareness, the role of social science research in addressing the challenges of behavioural and attitudinal changes, motivational and emotional response approaches, and relevant social marketing techniques must not be undermined.[4] The development of multi-disciplinary and inter-disciplinary teams and task groups of trained community ophthalmologists, service managers, health planners and medical social scientists should be encouraged and established.

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❐

Abstracts

A Population Based Eye Survey of Older Adults in Tirunelveli District of South India: Blindness, Cataract Surgery, and Visual Outcomes

P K Nirmalan R D Thulasiraj V Maneksha R Rahmathullah R Ramakrishnan S R Munoz A Padmavathi L B Ellwein

Aims: To assess the prevalence of vision impairment, blindness, and cataract surgery and to evaluate visual acuity outcomes after cataract surgery in a south Indian population.

Methods: Cluster sampling was used to randomly select a cross sectional sample of people ≥50 years of age living in the Tirunelveli district of south India. Eligible subjects in 28 clusters were enumerated through a door to door household survey. Visual acuity measurements and ocular examinations were performed at a selected site within each of the clusters in early 2000. The principal cause of visual impairment was identified for eyes with presenting visual acuity <6/18. Independent replicate testing for quality assurance monitoring was performed in subjects with reduced vision and in a sample of those with normal vision for six of the study clusters.

Results: A total of 5795 people in 3986 households were enumerated and 5411 (93.37%) were examined. The prevalence of presenting and best corrected visual acuity ≥ 6/18 in both eyes was 59.4% and 75.7%, respectively. Presenting vision <6/60 in both eyes (the definition of blindness in India) was found in 11.0% , and in 4.6% with best correction. Presenting blindness was associated with older age, female sex, and illiteracy. Cataract was the principal cause of blindness in at least one eye in 70.6% of blind people. The prevalence of cataract surgery was 11.8% – with an estimated 56.5% of the cataract blind already operated on. Surgical coverage was inversely associated with illiteracy and with female sex in rural areas. Within the cataract operated sample, 31.7% had presenting visual acuity ≥ 6/18 in both eyes and 11.8% were <6/60; 40% were bilaterally operated on, with 63% pseudophakic. Presenting vision was <6/60 in 40.7% of aphakic eyes and in 5.1% of pseudophakic eyes; with best correction the percentages were 17.6% and 3.7%, respectively. Refractive error, including uncorrected aphakia, was the main cause of visual impairment in cataract operated eyes. Vision <6/18 was associated with cataract surgery in government, as opposed to that in non-governmental/private facilities. Age, sex, literacy, and area of residence were not predictors of visual outcomes.

Conclusion: Treatable blindness, particularly that associated with cataract and refractive error, remains a significant problem among older adults in south Indian populations, especially in females, the illiterate, and those living in rural areas. Further study is needed to better understand why a significant proportion of the cataract blind are not taking advantage of free of charge eye care services offered by the Aravind Eye Hospital and others in the district. While continuing to increase cataract surgical volume to reduce blindness, emphasis must also be placed on improving post-operative visual acuity outcomes.

Published courtesy of :
Br J Ophthalmol 2002; **86**: 505–512

Does Prospective Monitoring Improve Cataract Surgery Outcomes in Africa?

D Yorston S Gichuhi M Wood A Foster

Aims: To determine if prospective monitoring influences cataract surgical outcomes in east Africa.

Methods: A prospective observational study of all routine extracapsular cataract extractions with posterior chamber lens implants carried out at Kikuyu Eye Unit, Kenya, between 1 January 1999 and 31 December 1999.

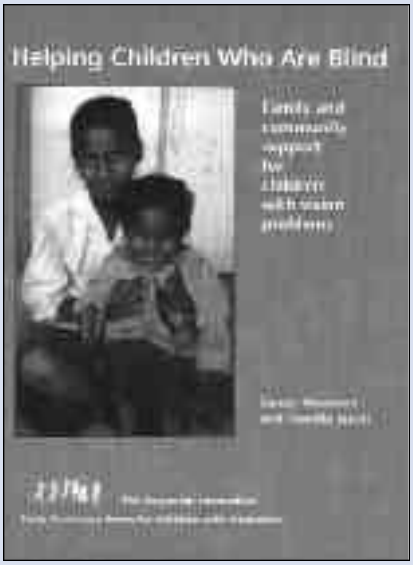
Results: Out of 1845 eligible eyes 1800 were included in the study. Two months' follow-up was available in 67.2% of patients. The proportion achieving a good outcome increased steadily from 77.1% in the first quarter to 89.4% in the fourth quar-

ter (χ^2 for trend, p<0.001). There was no change in the incidence of operative complications; however the proportion of patients achieving a good visual outcome following vitreous loss increased from 47.2% in the first 6 months to 71.0% in the last 6 months (χ^2 p<0.05). Of the eyes with poor outcome (best corrected acuity <6/60 at 2 months) half were due to pre-existing eye diseases. The proportion of patients with known ocular co-morbidity decreased from 10.2% in the first quarter to 5.9% in the fourth quarter (χ^2 for trend, p<0.05). Poor outcome was associated with age over 80 years, known diabetes, pre-operative bilateral blindness, any ocular co-morbidity, and intra-operative vitreous loss.

Conclusion: This study demonstrates improvement in visual outcome results after cataract surgery over a 1 year period. Monitoring of outcomes appears to be associated with a change in surgeons' attitudes, leading to greater emphasis on appropriate case selection, better management of surgical complications, and improved visual outcomes.

Published courtesy of :
Br J Ophthalmol 2002; **86**: 543-547

Book Review



Written in a simple, clear style and filled with illustrations, *Helping Children Who are Blind* is for parents, caregivers, teachers, health workers, rehabilitation workers and others who can help a child with vision problems.

The book covers many topics, including teaching common activities like eating, dressing and personal hygiene, helping a child move around safely, details on how to include learning activities in daily work, preparing for child care or school, supporting parents of blind children and assessing how much a child can see, and preventing blindness.

This book provides parents, community health workers and teachers with strategies for helping children with visual impairment become important and active members of their communities.
200 pages, Paperback. Now also available in Spanish.

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From January 2003, **negative marking** will be removed from all examinations and will no longer be used for the Part 1, Part 2, Part 3 and Diploma Examinations.

Diploma Examination in Ophthalmology DRCOphth

ANNOUNCING A CHANGE TO THE STRUCTURE

From November 2001, there has been no Practical Refraction section in the Diploma Examination

The New Diploma Examination (DRCOphth) is a test of ophthalmic knowledge including relevant basic sciences and clinical skills for candidates who have worked in ophthalmology for one year (full-time or equivalent). This work experience need not have been gained in the UK.

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UK and Overseas Examination Calendar 2002/03

Exam	Dates of Examination	Location	Closing Date
Part 1 MRCOphth	7–8 October 2002	**UK, India**	26 August 2002
	20–21 January 2003	**UK**	9 December 2002
	28–29 April 2003	**UK, India**	17 March 2003
	13–14 October 2003	**UK, India**	1 September 2003
Part 2 MRCOphth	4–8 November 2002	**UK**	23 September 2002
	2–6 June 2003	**UK**	22 April 2003
	15–16 October 2003	**India**	1 September 2003
	3–7 November 2003	**UK**	22 September 2003
Part 3 MRCOphth	3–7 March 2003	**UK**	20 January 2003
	16–17 October 2003	**India**	1 September 2003
	15–19 September 2003	**UK**	4 August 2003
Diploma in Ophthalmology (DRCOphth)	16–18 June 2003	**UK**	6 May
	17–19 November 2003	**UK**	6 October

Overseas Location:
- **Aravind Eye Hospital, Madurai, Tamil Nadu, India**

Professor Gordon Johnson's 'Retirement'

On 1st March, 2002, Gordon Johnson retired as Rothes Professor of Preventive Ophthalmology and Director of the Department of Epidemiology and International Eye Health (International Centre for Eye Health), Institute of Ophthalmology,London.ProfessorJohnsonwas also Honorary Consultant at Moorfields Eye Hospital.

The International Centre for Eye Health was founded in 1981 by Professor Barrie Jones and Gordon Johnson succeeded Professor Jones as Director in 1986.

Professor Johnson's impressive list of degrees and other qualifications have been followed by well over 100 published research papers and review articles, a number of book chapters and the standard text book, '*The Epidemiology of Eye Disease*', with Darwin Minassian and Robert Weale (Chapman & Hall, 1998).

A surprise tribute to mark his final year in post followed the Oxford Epidemiology Conference at Trinity College, Oxford, in March, 2001. Dr Allen Foster gave an account of 'the Prof's' life and career and superb musical items were sung by members of staff.

For over 15 years Professor Johnson has led the team at ICEH, in research, training courses and the provision of international resources, including our Journal. The Centre has become well known and renowned throughout the world, working closely with the World Health Organization (a Collaborating Centre), Universities and other Academic Centres, the International Agency for the Prevention of Blindness, and the International Non-Governmental Development Organisations, especially Christian Blind Mission International (CBMI) and Sight Savers International (SSI). Close ties with Moorfields Eye Hospital and the Royal College of Ophthalmologists have been fostered during these years. The alumni of former students reaches across the continents and around the world.

A farewell dinner took place in London on 28th February, 2002, when Professor Johnson was presented with a bound volume of the *Journal of Community Eye Health*.

It was in 1986 that I approached Professor Johnson with the idea of a Journal for developing countries. He energetically encouraged this vision and financial support was later given by CBMI and SSI. The first issue of the Journal appeared in 1988 and now reaches 175 countries.

'Retirement' is certainly a misnomer – Professor Johnson, for example, is currently working on the second edition of '*The Epidemiology of Eye Disease*'….. He was a speaker and chairman at the recent International Congress of Ophthalmology in Sydney, Australia, in April 2002…..

Professor Gordon J Johnson

Photo: Pak Sang Lee

Professor Gordon Johnson's high academic standards, leadership, personal awareness and sensitivity with his colleagues and many friendships, together with sheer hard work has made all of this possible – and, further, has given to many of us a sense of commitment and much valued fulfilment in our vocations and work towards the prevention of world blindness.

Thank you, Gordon.

D D Murray McGavin

JOURNAL OF COMMUNITY EYE HEALTH
INTERNATIONAL RESOURCE CENTRE
WE ARE MOVING….!

After more than 12 years in a Portacabin in the grounds of the Institute of Ophthalmology, the office of the **Journal of Community Eye Health** and the **International Resource Centre** (IRC) is moving to the **London School of Hygiene and Tropical Medicine** (LSHTM). Other departments of ICEH have already relocated to the London School.

As a consequence of this move we suspended our **IRC Information and Distribution Services** on August 1st 2002 until further notice. All communications, orders and enquiries will be carefully noted but not acted upon until our new systems are established effectively at the LSHTM.

We apologise for the inconvenience this may cause and will let you know our full contact details in the next issue of the Journal by which time we should be fully active again. Our website, **www.jceh.co.uk** will also have our details. Meanwhile, our initial contact address at LSHTM from mid-October will be:

Journal of Community Eye Health
International Eye Health Group
Department of Infectious and Tropical Diseases
London School of Hygiene and Tropical Medicine
Keppel Street, London WC1E 7HT
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