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Blindness in the developing world

The reasons for the continuing increase in the number of blind people worldwide and the efforts being taken to address this important problem are the issues discussed in this editorial.

The estimates of worldwide blindness are disturbing in their simplicity.

- in 1975, 28 million blind; in 1984, 31 million; today, probably 35 million
- at least 17 million blind with surgically curable cataract
- 6 million blind with treatable infections (trachoma, onchocerciasis, and suppurative keratitis)
- 1.5 million children blind; the major cause being vitamin A deficiency associated with malnutrition

Cataract, childhood blindness, and ocular infections - all potentially avoidable - remain the priorities in blindness control programmes, accounting for 70% of all blind people in the world, and more than 200 million years of blind life. The paper in this issue by Schwab and Kagame highlights the importance of corneal disease from vitamin A deficiency and measles as the major cause of childhood blindness in Zimbabwe.

The prevention of blindness programme of the World Health Organisation has been instrumental in developing strategies for the control of these blinding diseases in non-industrialised countries.¹⁻⁵ For example, the control of cataract blindness will remain surgical until ways of slowing down the process of lens opacification are known. Intraocular lens (IOL) implantation is becoming routine in Latin American countries and in urban centres of Asia. The benefits and hazards of intracapsular cataract extraction or extracapsular cataract extraction, aphakic spectacles, anterior chamber IOLs, and posterior chamber IOLs have been clearly presented in the report of the WHO working group.⁶ Clinical trials are underway to answer questions concerning the safety and visual outcome of different cataract procedures in the context of the developing world.

In the control of ocular infections, risk factors and public health interventions have been defined for trachoma. A new antibiotic azithromycin offers the hope of a systemic long acting chemotherapeutic agent to control chlamydial infection; and the correction of trichiasis within affected communities by paramedical workers has been reported to give

successful results.⁷⁻⁹ In parts of west Africa onchocerciasis has been prevented by putting larvicides in rivers to control the *Simulium* fly vector. Ivermectin, a microfilaricide, given orally on an annual basis, reduces the community microfilaria load with a consequent decrease in the incidence of ocular disease,¹⁰ and macrofilaricides which eliminate the adult worm, *Onchocerca volvulus*, are being field tested. There is therefore justified optimism that blindness from this disease can be prevented in the next decade.

Vitamin A deficiency, as well as being the main cause of childhood blindness, has been found to be an important cause of infant mortality.¹¹ Major nutrition and vitamin A supplementation programmes are being developed as part of child survival programmes which should also lead to a reduction in nutritional blindness.

If the causes of blindness are known, and the knowledge and technology to control blinding diseases have been developed, what are the reasons for the continuing rise in the number of people becoming blind? An increasing world population and improved life expectancy in developing countries are obvious factors, but there are other important reasons to be considered, particularly when one realises that at least 80% of all blindness is potentially avoidable.

Awareness

The first reason is lack of awareness. Many blind people with cataract living in poor areas of the developing world are not aware that they can be helped. Similarly, health care professionals may not be aware of the size of the problem and the need to mobilise resources to deal with avoidable blindness as a priority.

Accessibility

The second reason is the problem of accessibility. Blind patients may have limited or no access to the available specialised services because of geographic or social isolation. The majority of blind people live in Asia (20 million) or Africa (6 million). They are usually elderly people who will not travel more than 20 miles to see a specialist at a hospital. In parts of Asia and, particularly, Africa there are few

available specialists (India one ophthalmologist/100 000 population, Africa on average one ophthalmologist/1 million population, compared with Europe at approximately 1/20 000), and within a country there is often unequal distribution of specialist services, with a concentration in the larger cities and very limited services in rural areas.

Affordability

The third reason concerns affordability. The cost of medical care throughout the world continues to increase. The proportion of government funding spent on health in developing countries has increased very little over the past 25 years and, moreover, these same countries have become poorer in real terms.¹² The result is that hospitals and doctors have inadequate income from government sources and look to patients to pay for services – the poor may therefore find the cost of care and, particularly eye surgery, beyond their capability.

Adequate and appropriate service

The final reason can be summed up as the failure to provide an adequate and appropriate service. For a service to be adequate patients must clearly be able to witness the benefit of treatment provided. For example, a technically 'successful' cataract operation from the surgeon's viewpoint may not be seen as beneficial by the patient if no or poor aphakic correction is provided. For a service to be appropriate, it must use the limited available resources (manpower, materials, and money) to meet the most essential needs of the community it serves.

Resources

Having briefly identified some of the constraints, what are the available resources to address the problem?

- At the international level, the World Health Organisation's programme for prevention of blindness has an impressive record in developing the policies and strategies for control of the major blinding diseases.
- Ten major non-governmental organisations (the NGO consultative group to the WHO programme) provide approximately £30 million/year for eye care activities in developing countries.
- The World Bank has financed the successful onchocerciasis control programme in 11 countries of west Africa and is at present negotiating support with the Indian government to develop and increase cataract services from 1.4 million operations to at least 2 million operations annually.
- Lions International has begun a 5 year programme (Sight First) with a target budget in excess of £70 million in order to develop programmes against blindness.
- The International Council of Ophthalmologists is trying to interest ophthalmologists from economically developed countries in the problem of avoidable blindness in developing countries.

Planning

- All these initiatives are laudable; however they
- require coordination in order to avoid duplication
 - need to be focused on the more effective prevention of blindness activities
 - must target the most needy situations
 - require expertise in management
 - and need personnel with experience of local working situations

At the international level the International Agency for Prevention of Blindness (IAPB) provides opportunity for all those concerned in prevention of blindness to meet and discuss problems and solutions – the next assembly will be in Berlin 9–13 May 1994. At the country level the national committees for prevention of blindness, of which there are now more than 80, provide the forum for government, NGOs, service organisations, and individual specialists to assess the needs, plan, implement, and evaluate activities to combat blindness within individual countries.

Conclusion

During the past 12 years, since the formation of IAPB and the WHO programme, much has been achieved but the disturbing fact remains that the number of needlessly blind people in the world continues to increase. For this trend to be reversed there is a specific need for improved planning and management of national programmes, and for more resources to be allocated to prevention of blindness activities by governments and international organisations. For an individual to be blind is a major challenge for that individual. For 25 million individuals to be blind from diseases which are curable or preventable is a major challenge to our profession.

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