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PREVALENCE OF BLINDNESS DUE TO CATARACT IN DEVELOPING AND UNDER DEVELOPED COUNTRIES

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ABSTRACT
Globally, it is estimated that there are 30 million persons who are blind. Moreover, a further 80 million people have low vision and are at great risk of becoming blind. The main causes of blindness and low vision are cataract, trachoma, glaucoma, onchocerciasis, and xerophthalmia; however, insufficient data on blindness from causes such as diabetic retinopathy and age-related macular degeneration preclude specific estimations of their global prevalence. The age-specific prevalence of the major causes of blindness that are related to age indicate that the trend will be for an increase in such blindness over the decades to come, unless energetic efforts are made to tackle these problems.

KEYWORDS: Moreover, a further 80 million people have low vision and are at great risk of becoming blind.

INTRODUCTION
Cataracts are the major cause of blindness and visual impairment in developing and under develop countries to more than 90% of the total disability adjusted life years. The coverage continues to be a problem in many countries, especially the female population, those residing in rural areas and those who are illiterate. Even after years of medical advancement cataract still continue to be major cause blindness globally. Especially with rapidly aging population, it is a challenge to tackle. We need to plan a comprehensive strategy addressing issues related to availability, affordability, accessibility and acceptability of eye-care services**.** remains the Cataract is leading cause of blindness in Africa. In Africa alone, it is estimated that there are about 3-5 million cataract blind. As life expectancy in Africa increases so will the incidence of cataract blindness. Existing resources of manpower and services cannot cope adequately with the present backlog of cataracts, let alone the anticipated increased load. The deployment of local ophthalmologists to deal with cataract load would be cost-effective in delivering appropriate eye care but the scarcity of ophthalmologists makes the option ineffective.

To eradicate blindness and visual impairment VISION 2020 was introduced. Priority of the VISION 2020 initiative to eliminate avoidable blindness by the year 2020.

DISCUSSION
The lens lies behind the iris and the pupil. It works much like a camera lens. It focuses light onto the retina at the back of the eye, where an image is recorded. The lens also adjusts the eye's focus, letting us see things clearly both up close and far away. The lens is made of mostly water and protein. The protein is arranged in a precise way that keeps the lens clear and lets light pass through it.

But as we age, some of the protein may clump together and start to cloud a small area of the lens. This is a cataract. Over time, the cataract may grow larger and cloud more of the lens, making it harder to see.

Researchers suspect that there are several causes of cataract, such as smoking and diabetes. Or, it may be that the protein in the lens just changes from the wear and tear it takes over the years.

Cataract affecting vision
Clumps of protein reduce the sharpness of the image reaching the retina. The lens consists mostly of water and protein. When the protein clumps up, it clouds the lens and reduces the light that reaches the retina. The clouding may become severe enough to cause blurred vision. Most age-related cataracts develop from protein clumping. When a cataract is small, the cloudiness affects only a small part of the lens. You may not notice any changes in your vision. Cataracts tend to “grow” slowly, so vision gets worse gradually. Over time, the cloudy area in the lens may get larger, and the cataract

may increase in size. Seeing may become more difficult. Your vision may get duller or blurrier.

The clear lens slowly changes to a yellowish/brownish color, adding a brownish tint to vision. As the clear lens slowly colors with age, your vision gradually may acquire a brownish shade. At first, the amount of tinting may be small and may not cause a vision problem. Over time, increased tinting may make it more difficult to read and perform other routine activities. This gradual change in the amount of tinting does not affect the sharpness of the image transmitted to the retina. If you have advanced lens discoloration, you may not be able to identify blues and purples.

The most common symptoms of a cataract are

Cloudy or blurry vision, Colors seem faded, Glare Headlights, lamps, or sunlight may appear too bright. A halo may appear around lights. Poor night vision. Double vision or multiple images in one eye. (This symptom may clear as the cataract gets larger. Frequent prescription changes in your eyeglasses or contact lenses.

Risk factors of Cataract

The risk of cataract increases as you get older. Other risk factors for cataract include:

1. Certain diseases (for example, diabetes).
2. Personal behavior (smoking, alcohol use).
3. The environment (prolonged exposure to ultraviolet sunlight)
4. Drug induced such as steriods commonly seen in young and middle aged adults

The age-standardized prevalence of blindness in adults older than 50 remains highest in western sub-Saharan Africa, with a rate of 6.0%. the greatest decline in age-standardized blindness because of cataracts in adults older than 50 between 1990 and 2010 were in East Asia, tropical Latin America and Western Europe. Recent studies have largely found higher rates of cataract in women than in men. A new simulator for training ophthalmologists in manual small-incision cataract surgery holds promise for the future. Nevertheless, advances in surgical removal of cataracts, including small-incision surgery, use of viscoelastics, and the development of intraocular lenses have made treatment very effective and visual recovery rapid in most cases. Despite these advances, cataract continues to be a leading public-health issue that will grow in importance as the population increases and life expectancy is extended worldwide.

With advancement of science and technology phacoemulsification and small incision extracapsular surgery is showing tremendously good results in cataract surgeries. Phacoemulsification is a preferred technique for cataract surgery in developed countries, but large-scale implementation in developing countries may prove to be a challenge. An alternative surgical technique, manual sutureless small incision extracapsular cataract surgery, has been increasing in popularity as the technique has been shown to yield similar surgical outcomes as phacoemusification.

Vision 2020

The VISION 2020 strategy includes planning by administrative districts of around 1 million people. Planning requires realistic target setting—how many cataract operations need to be done to eliminate blindness or visual impairment? The cataract surgical rate (CSR), the number of operations done per million persons, is a convenient indicator for planning and monitoring. Estimating what the CSR needs to be requires one to take into account a number of factors and to make assumptions. Key factors that determine what the CSR to eliminate visual disability from cataract needs to be for any population of 1 million people include:(1) the age structure or proportion of the population that is old enough to be at significant risk of cataract-related vision loss (for convenience, this is often assumed to be those aged 50 years and older); (2) the visual acuity threshold at which cataract is operated on, i.e, how blindness or visual disability is defined (this factor might be determined by policy [rationing or case selection] or by the demands of the population); and (3) biologic or environmental factors that determine incidence of cataract in a population.

Outcomes

Outcomes from modern cataract surgery are much better than they were 20 years ago—because of fewer operative and postoperative complications and significant improvements in uncorrected visual acuity. Of all patients undergoing cataract surgery, 85-90% will have 6/12 (20/40 or 0.5) best corrected vision, and this figure rises to around 95% in patients who have no ocular comorbidity such as macular degeneration, diabetic retinopathy, or glaucoma. Because the surgery involves substitution of the patient's natural lens with an artificial implant, selecting the correct optical power of the replacement lens is crucial. Most patients wish to be left with good unaided distance vision, but some (usually those already short sighted) wish to be left with a degree of myopia so that their best unaided vision is at a closer distance (such as for reading).

In the developed world expectations about the quality of postoperative unaided vision are high. However, the refractive outcome is not always as predicted (so called refractive surprise), and patients who had not previously required glasses for distance vision but who require them after surgery can be extremely disappointed. Procedures to deal with this eventuality are available (such as exchanging the intraocular lens or adding another one and refractive laser surgery), and these may be appropriate depending on individual circumstances.

In the developing world, the impact of rapid visual rehabilitation compensates for the extra cost of the intraocular lens used in the procedure. Saving the

economic costs of workforce loss from blindness, and the costs of the socioeconomic support required for blind people, significantly favour modern cataract surgery.

Complications

Although small incision extracapsular surgery is safer than earlier techniques, complications do still occur. During surgery, the posterior capsule can be ruptured, and this can lead to loss of part or all of the nucleus into the posterior segment. More commonly, however, it leads to prolapse of the vitreous body into the anterior segment. The prolapsed vitreous material must be carefully and meticulously removed from the area of incision and from the site of lens implantation. Rupture of the posterior capsule (with or without loss of vitreous humour) is reported to occur in 2-4% of operations. Capsule rupture is associated with an increased incidence of infected endophthalmitis, cystoid macular oedema, and retinal detachment.

Patients should be aware that some complications can lead to loss of functional vision in the operated eye. Many surgeons put the risk of this at around 0.1%, mainly as a result of three specific complications infected endophthalmitis, choroidal or suprachoroidal haemorrhage, and retinal detachment. This is particularly important, of course, if the fellow eye does not have useful vision.

In developing countries, endophthalmitis remains a major concern. The periodic outburst of sporadic or cluster cases in mass cataract surgery "camps" remains a challenge for the organisations involved.

Recent Developments

Various improvements in surgical technique, each relatively minor, have cumulatively resulted in greatly increased efficiency. Phacoemulsification equipment has become more sophisticated, partly as a result of better understanding of how it works and partly from improved microelectronic control. As a result, the physical energy used to break the nucleus down is lower than it was 10 years ago, and surgeons are now able to use higher vacuums and aspiration rates when sucking out the pieces. Better understanding of some of the factors leading to opacification of the posterior lens capsule that can occur in the years after cataract surgery has reduced its incidence—from a five year incidence of 40-50% expected 10 years ago to about 10% or possibly lower today (though accurate figures are hard to come by).

Measures include meticulous removal of all strands of cortex from the equator of the capsule, incorporating a sharp edge to the optic of the intraocular lens implant, and possibly selection of appropriate lens material.

Intraocular lens design has seen two major innovations. Until recently, these lenses had spherical anterior and posterior surfaces. Light passing through more peripheral parts of such spherical lenses is bent more than light passing through more central parts, resulting in reduced image quality ("spherical aberration"). In disciplines such as microscopy, astronomy, and photography the use of aspheric lenses has been standard for decades. Some aspheric intraocular lenses are now available and neither add nor remove any spherical aberration in the eye. Other lenses are designed to nullify the degree of positive spherical aberration that exists in most corneas. Although this improves image contrast in low illumination, there is some evidence that the eye may function better with a small degree of spherical aberration. For example, depth of focus is improved by a degree of spherical aberration, and uncorrected reading vision is poorer in patients with intraocular lenses designed to leave the eye aberration-free.

The other important aspect of new lens design is attempting to provide a spectacle-free full range of vision distance, intermediate, and near. Bifocal or multifocal intraocular lenses have been in use for 20 years, but the latest versions seem to offer spectacle independence to substantial numbers of patients with much reduced side effects compared with early designs.

CONCLUSION

Cataract remains most common treatable cause of blindness. But treating cataract blindness worldwide continues to be a formidable challenge. Significant barriers include cost, lack of population awareness, shortage of trained personnel and poor surgical outcomes. Both phacoemulsification and manual small incision extracapsular cataract surgery achieve excellent visual outcomes with low complication rates, but manual small incision extracapsular cataract surgery is significantly faster, less expensive and requires less technology. Therefore, manual small incision extracapsular cataract surgery may be the preferred technique for cataract surgery in developing and under-developed countries.

Yes! With our continue efforts we can and we will eradicate maximum blindness from Liberia.

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