

Poverty and Human Development

Not a Stretch for Ophthalmology

WITH EACH CATARACT OPERATION, corneal transplant, and donation of azithromycin for trachoma, the opportunity occurs to enhance the quality of life through the restoration of sight or the prevention of blindness. In this way, the contribution that ophthalmology makes to the fundamental issues of human development plays out in the context of clinical care and public health. Human development—political speak for quality of life and strategies for and barriers to improvement—and the effect of poverty on human development is the subject of this special issue of *Archives of Ophthalmology* as well as *JAMA* and the other *Archives* journals. Ophthalmology, and ophthalmic epidemiology in particular, has had a long and abiding interest in the effect of eye diseases on disadvantaged populations worldwide, and research has evaluated the major role that poverty has on eye health. However, there are elements in the current discussions about achieving the full potential for human development that have not been linked to ophthalmology as concretely as they should have.

One element is the role of women and their education. The third of the United Nations Millennium Development Goals is to eliminate gender disparity in all levels of education no later than the year 2015 and is seen as being key to any developmental effort.¹ Where education of women is encouraged, infant and child mortality rates decline, high birth rates decrease, and poverty indicators improve.²⁻⁵ In many cultures, women are not only responsible for the care of the household but are also secondary, if not primary, income providers. Whereas access to quality education for women requires political, societal, and personal will, the ability to participate in mainstream education and to use the opportunity fully is better assured with good vision.

However, many of our fundamental indicators show that women are at a disadvantage in this regard. For reasons that are unknown, cataract rates are higher in women than in men.⁶ What is worse, this disparity persists when examining the rates of blindness and visual loss due to cataract, which are significantly higher in women compared with men in many countries.^{7,8} Women have more difficulty accessing the resources necessary to obtain cataract surgery, and cataract campaigns are not designed to especially encourage women.⁹⁻¹¹ Operational research designed to determine barriers for women, and especially to identify strategies to overcome these barriers to access surgery, should be undertaken.

Women in low-income countries also suffer disproportionately from trachoma, the leading infectious cause

of blindness.¹² Trichiasis, inturned lashes resulting from numerous, prolonged episodes of trachoma, can be alleviated with surgery. Evidence from 2 national trachoma-control programs suggests there is no gender disparity in trichiasis surgical rates,¹³ but the issue is the overall lack of surgical coverage for trichiasis worldwide. An estimated 10 million persons have trichomatous trichiasis, which needs surgical treatment.¹⁴ Moreover, post-operative recurrence rates of trichiasis, as reported by national trachoma control programs, are often high and unnecessary. Research suggests that with good training and certification of ancillary surgical personnel and the provision of azithromycin postoperatively, recurrence rates can be reassuringly low.¹⁵ Further programmatic support for basic supplies and transport for surgeons to rural locations on the front line of the surgical fight against trichiasis are still pressing needs.

Recent data from rural Africa show that presbyopia rates appear to be higher in women compared with men, adversely affecting the livelihood of those who may rely on such activities as sewing, teaching, or basket making.¹⁶ Globally, uncorrected refractive error is emerging as a major cause of visual loss and there is now evidence that uncorrected presbyopia has a significant effect on the ability of even rural populations to undertake daily tasks.¹⁷ In rural Africa, the provision of reading glasses to the community need not be expensive and could represent an ideal small business opportunity for women. One nongovernmental organization, recognizing this opportunity, has developed a successful business model for provision of low-cost presbyopic spectacles to people in Latin America and Asia¹⁸ and is starting a program in Africa as well.

The number one United Nations Millennium Development Goal is the alleviation of extreme poverty, a paramount factor in enabling those who are most affected to realize their full potential for human development.¹ In the least wealthy countries, more than 1.2 billion people live on less than \$1 per day. The goal is to halve the proportion of the population at this extreme level of poverty by 2015. Strategies for poverty reduction are legion, the subject of endless meetings, and have many indicators but few concrete steps. Addressing the structural problems that ensnare people in poverty is difficult. Progress has been uneven and though there have been successes in Asia, an actual increase has been reported in the last 5 years in the number of individuals from sub-Saharan Africa who live in extreme poverty. The families in these disadvantaged communities struggle for sustainable food, supplies, and shelter, to say nothing of basic eye and health care. It requires no imagination to

project what loss of vision does to people in such circumstances, and indeed there is evidence for a 4-fold higher mortality rate among blind individuals in developing-country settings.¹⁹ The promotion of the “Right to Sight,” the rallying cry of the VISION 2020 initiative, will play its own significant role in alleviation of poverty if indeed its partners are able to eliminate avoidable blindness for all by 2020.

But there are local “houses to clean” as well. Evidence exists that within wealthy countries like the United States, disadvantaged minorities suffer disproportionately from blindness and visual impairment due to avoidable causes.²⁰ African American individuals are less likely to have cataract surgery compared with Caucasian individuals,²¹ despite having similar or higher rates of disability due to an opacified lens. African American people are known to be at high risk for glaucoma, yet among Medicare beneficiaries, African American patients with glaucoma used eye care services at a rate two-thirds that of Caucasian patients with glaucoma.²² There are virtually no data on the reasons for such a health disparity.

Latin American individuals are at high risk for diabetes and, with cultural and financial barriers that inhibit proper control, are at greater risk of diabetic eye diseases.²³ In Baltimore, Maryland, a staggering 53% of Latin American individuals with diabetes have never seen an eye care provider, with barriers identified as lack of knowledge that eye problems can result from diabetes, perceived cultural barriers, and a lack of financial resources for eye or health care in general (Beatriz Muñoz, MS, unpublished data, 2007). In a Los Angeles cohort of Latin American individuals with diabetes, 65% had not had an eye examination in the previous 2 years.²⁴ These are unacceptable statistics, when we know that early intervention and control are highly cost-effective from a budgetary savings and societal perspective.²⁵ Improved health education strategies that target these minority communities, while important, are not the answer as long as structural barriers exist between eye care providers and the neediest of patients.

Perhaps, then, this is an ideal contribution from ophthalmology and eye care to these global discussions of poverty and human development—poverty prevention. By furthering the goals of restoration of sight and prevention of blindness, women are prevented from losing the potential offered by enhanced educational opportunities; ophthalmologic intervention in disadvantaged communities helps prevent further continuance in the destructive cycle of poverty. Ophthalmology becomes an integral part of larger health strategies to ensure that human development reaches its maximum potential.

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