

## Gender and eye health

### Why are we addressing gender issues in vision loss?



**Paul Courtright**

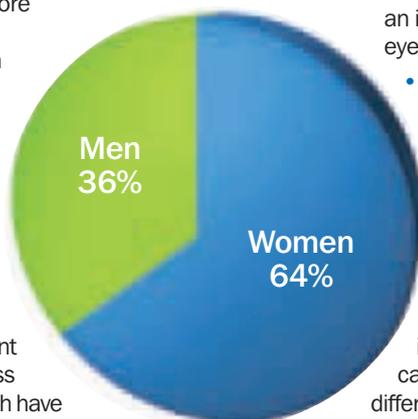


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In the last decade, there has been increasing evidence that women are affected by blindness and visual impairment to a much greater degree than men. A systematic review of global population-based blindness surveys carried out between 1980 and 2000 showed that blindness is about 40 per cent more common in women compared to men (in persons older than 50 years).<sup>1</sup> Since then, there have also been a number of large national surveys (for example, in Pakistan and Nigeria), as well as many rapid assessment of avoidable blindness studies (RAABs), which have confirmed the earlier findings.

**Figure 1: Estimated global blindness by gender (2001)<sup>1</sup>**



We now know that being a woman is a significant risk factor for some eye diseases; it is also an important factor in the use of eye care services:

- Women account for about 64 per cent of the total number of blind persons globally (a summary value).
- In many areas, men are twice as likely as women to be able to access eye care.<sup>2</sup>

The higher rates of blindness and visual impairment among women can be explored from three different perspectives: risk factors, access to services, and life expectancy.

**1 Risk factors.** Social and cultural differences between men and women can expose women to a greater risk of eye disease. For example, in countries where trachoma is endemic, the role of women as child care providers means they may be more likely to develop trichomatous trichiasis; this is due to their increased exposure to children with trachoma. Biological differences between men and women can also lead to increased risk of some eye diseases in women. For example, there is good evidence that women have a slightly higher incidence of cataract than men. Reasons for the higher incidence are not fully understood, but hormonal differences may contribute.<sup>3</sup>

*Continues overleaf* ➤



Shilpa Vinod Bhatte

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Women's responsibilities as child care providers often make it difficult for them to leave home and travel to where eye care is available. SWAZILAND

Daisy Wilson

**2 Access to services.** The social, cultural, and economic differences which exist between men and women also lead to reduced access to services for women. For example, women may not have freedom of movement, their need for eye care may not be considered as urgent or important as that of male family members, or they may not have financial decision-making authority within the family to pay for eye care services. In addition, women's child care responsibilities may make it difficult for them to leave home. Women's fears of how their vision loss may affect their status in the family may also make them downplay their loss of vision (and hence their need for eye care or surgery); some may prioritise their family's needs above their own need for eye care.

**3 Life expectancy.** It is important to remember that, in most cultures, women have a longer life expectancy than men. Since vision-related disorders increase with age, this will mean that there are more women with certain eye conditions, particularly those which occur late in life.

In recognition of these inequalities between the eye health of men and women, the theme of World Sight Day 2009 is 'Gender and Eye Health'. The use of the word 'gender' in the theme is very specific: whereas the term 'sex' refers to the biological differences that make us male or female, 'gender' refers

to the different roles women and men are expected to fulfil in their culture or society. As we saw above, these different roles often have a direct (and negative) impact on the eye health of women.

The following areas require attention if we are to address gender inequalities in eye health.

### Cataract

There is evidence that adult men and women still have unequal access to cataract services. Because women have a slightly

higher incidence of cataract and tend to have longer life expectancy than men, women should account for 60–65 per cent of all cataract operations. However, recent analysis of 22 population-based studies in 17 low- and middle-income countries showed that, in all studies

except one, more men than women received cataract surgery.<sup>2</sup>

There can be gender differences in the quality of cataract surgery people receive. In some settings, women are less likely to have intraocular lens (IOL) surgery compared to men. Since few settings routinely report outcome data, there is no information on the extent of this inequality.

At least three approaches have been shown to improve access to cataract surgery for women: bringing women and services together, counselling family members, and using women to reach women.

**'Some women may prioritise their family's needs over their own need for eye care'**

### 1 Bringing women and services together.

In much of Africa and Asia, providing transport to hospital is essential for reaching older women in rural areas. Due to financial, social, and cultural constraints, these women are often unable to travel to a hospital to seek services. Studies of patterns of surgery utilisation, such as one carried out in Tanzania,<sup>4</sup> also confirm the importance of outreach activities to reach women with cataract.

**2 Counselling family members.** Older women in most low- and middle-income countries do not have the ability to make individual decisions regarding their own health. In most cases, decision making is the remit of husbands or sons. An older woman will not be in a position to accept surgery unless her family supports her to do so. Counselling of family members, even when surgery is provided at a highly subsidised price or free of charge, appears to be an important approach where women are concerned.<sup>5</sup>

**3 Using women to reach women.** As colleagues from Pakistan, Egypt, and India have noted in this issue, the potential contribution of woman to woman contact can be considerable as it tends to build trust between women and health care providers.

For all eye care providers, a critical first step is to start monitoring the use of services and outcome of surgery separately for men and women. A critical review of routine programme data can be an extremely powerful tool for finding the magnitude of the problem and for encouraging programme staff to start exploring solutions.

## Trachoma

Trachoma is one of the few 'life cycle' eye diseases affecting people of all ages in endemic areas of the world. Recent work in Southern Sudan has demonstrated trichiasis in children, with girls being 1.5 times more likely to have trichiasis than boys.<sup>6</sup> While there may be some biological reason that girls develop a more intense response to *Chlamydia trachomatis*, the major reason that females (of all ages) are 1.8 times more likely to have trichiasis compared to men<sup>7</sup> relates to their gender roles and responsibilities as child care providers (see page 22).

As the SAFE strategy indicates, addressing trachoma requires planners and health care providers to consider all of the various ways we reach into communities and address the needs of women and girls. Interventions can be related to water use, latrines, distribution of antibiotics, or surgery for trichiasis. The recently published manual *Women and Trachoma: Achieving Gender Equity in Trachoma Control* (see page 32) aims to provide those involved in trachoma control with strategies to ensure that the current inequality in the burden of trachoma becomes history.

## Childhood blindness

Nutritional blindness (such as vitamin A deficiency) was once the most common cause of blindness in children; it has now become rare<sup>8</sup>, except in areas of extreme poverty or recent unrest. As a result, congenital and developmental cataract has now emerged as a common cause of blindness in various settings in the world. With the establishment of paediatric ophthalmology tertiary centres, reports on utilisation of services, not normally available before, have now been generated. These reports generally show significantly more boys than girls receiving surgery for congenital or developmental cataract. As Bronsard and Shirima note in their article in this issue, although gender inequality in use of services (surgery or postoperative spectacles and low vision devices) may exist, it need not be inevitable. Recognising gender inequalities in service uptake is the first step to finding ways to correct it.

## Glaucoma and diabetic retinopathy

Although the gender issues surrounding glaucoma and diabetic retinopathy are not explored in this issue, this does not mean they should be ignored.

There is clear evidence from eastern Asia that women have a higher incidence of primary angle-closure glaucoma (PACG) compared to men.<sup>9</sup> There have not been adequate investigations to determine whether women with PACG have equal access to services (or similar outcomes) as men.

There appears to be no sex-specific difference in incidence of primary open-angle glaucoma, but the few studies of service use suggest that men are more likely than women to receive surgical services.<sup>10</sup>

Hospitals providing medical or surgical treatment for glaucoma need to start monitoring use of these services by sex.

Diabetes is a growing epidemic throughout much of Asia and Africa, but there is inadequate data to suggest differences between men and women in incidence or utilisation of services for diabetic retinopathy.

Glaucoma and diabetes are growing priorities that could be managed more equitably and effectively if we understood how people used the eye care services we offer.

## The way forward

All of the articles in this issue should stimulate us to take some steps, the first of which is to understand these problems at community, country, and global level. It is at the community level where we will make the biggest impact; we should remember that our service delivery systems need to consider the needs of women as well as men. At the country and global level, as

recently recommended by WHO, we should get into the habit of providing reports that are disaggregated by sex. This is not necessarily onerous. In fact, most health care systems already routinely record sex; we just need to make sure that this information is not lost along the way in our reporting.

The World Sight Day 2009 theme of 'Gender and Eye Health' is both a challenge and an opportunity for the prevention of blindness community. Our health care environments are undergoing change: patient expectations are changing, technology is changing, and communities are changing. Ensuring that our eye care programmes address gender inequalities will enable all people – men as well as women, boys as well as girls – to receive the best we have to offer.

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## What can we do?

- When **consulting with a community** about eye care programmes or services, include women and encourage the community to involve women in decision-making.
- When **designing services and delivering them**, incorporate assistance to women, for example by providing transport to clinics or using female health workers where cultural or religious taboos exist.
- When **conducting research or monitoring programmes**, disaggregate the data by sex.



# Working with women to improve child and community eye health



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In the slums and rural areas of India, visual impairment, blindness, and childhood blindness are usually more prevalent.

In order to improve the eye health of children and the community in these areas, it is important to understand the influence women and mothers have over children's eye health and the eye health of the community as a whole.

## The social context

In these slums and rural areas, most families are poor. Women also tend to have lower levels of education, less financial independence, and lower social status than men. But why is this so?

There is also a strong preference for sons in these areas of India, with daughters being viewed as economic burdens. This preference for sons, combined with high dowry costs for daughters, means that many parents would rather pay for their sons than their daughters to receive education or vocational training – especially when families are poor and their resources are limited.

When daughters reach adulthood, they are less educated than their brothers and therefore less able to earn a living and to be financially independent. This reinforces the view of women as economic burdens and contributes to their lower social status.

As a result, women often have very little say in how family resources are allocated and are less able to ensure that their children, daughters in particular, will receive the eye care they need. They also have less influence in community decisions that affect eye health.

## The importance of education

Researchers have recognised that educating girls is important for improving health, reducing gender inequality, and empowering women.<sup>1</sup> Every extra year of maternal education in low- and middle-income countries reduces under five child mortality by 5–10 per cent. Educated women are also more likely to make use of health services, including eye care services, for their children.<sup>2</sup>

Education improves health outcomes by increasing women's ability to acquire and use health-related information and services.<sup>3</sup> Education and the resulting economic independence and increased status of women also gives greater bargaining power in household decisions and personal relationships, which often translates into increased allocation of household resources to child health and nutrition.<sup>4,5</sup>

## Addressing the problem

Although it would be ideal to ensure that girls received the same levels of education as boys, when this is not possible we can still improve the situation of adult women by:

- providing health education which women can use to improve their family's eye health
- providing literacy and vocational skills training to allow women to improve their financial independence and, as a result, their influence in family decisions.

Ultimately, the community as a whole will benefit: when women have higher social status, they are in a better position to help improve conditions in their community that will lead to better eye health. These include provision of safe drinking water, sewage disposal, toilet facilities, and sanitation within accessible reach of households. Women have an important role to play in the planning, delivery, and maintenance of such services.

## Health education

Health education for women should include:

- information about child rearing and feeding practices
- basic eye care and hygiene
- the causes and treatment of common eye diseases
- prevention of eye injuries
- basic first aid
- advice about when to seek professional care.

Targeting mothers in the antenatal and postnatal period helps in the prevention of ophthalmia neonatorum and other eye infections due to harmful traditional practices. Vitamin A deficiency can be prevented by informing mothers about the importance of vitamin A-rich foods and exclusive breastfeeding. Mothers should also receive information about the importance of primary immunisations such as measles, as these will help prevent nutritional blindness.

## Literacy and skills training

Literacy and skills training for women and mothers can improve their confidence and ability to function in society as well as their ability to earn income for their family. Being literate not only helps women to access



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Women in Dang are trained in tailoring. INDIA



**Women in a slum gather at an adult literacy class in the community. INDIA**

health information and information about available eye care services, but also enables mothers to educate their children with regards to eye care and eye hygiene.

Learning new skills can enable women to start their own small businesses and earn an income. In addition, teaching women how to use micro-financing and other saving schemes will help them make the most of the money they earn. As income earners, women not only help to improve their family's ability to afford better food, eye care, and education for their children, they also enjoy better social status within the family and community.<sup>6</sup>

### Women's groups (self-help groups)

The author's non-profit organisation, Child Eye Care Charitable Trust (CECCT), runs holistic community eye care programmes in slums in Mumbai and rural communities in the Dang tribal area in Gujarat. These programmes, which are sponsored by Operation Eyesight, aim to meet a community's need not only for good vision, but also for health, nutrition, education, and economic independence.

Women's groups, also known as self-help groups, are an important component of the trust's work. They are a means to provide health education as well as literacy and skills training to women in poor communities. Groups consist of fifteen to twenty women from the same area who meet once or twice a month.

**'It is important to include men in development projects; doing so will benefit the family'**

With the guidance of the trust and local non-government organisations, the women receive training in skills such as making candles, soap, chalk, incense sticks, artificial flowers, or pickles. These skills can usually be acquired within one to three months and enable women to start their own small business.

Women are also taught how to set up a bank account in which they deposit their monthly income. When the women in the group have deposited a set amount per month, they can then apply to the bank for registration, which entitles them to receive credit from the bank and concessions in various government schemes, meant specifically for women from poor families.

The groups receive adult literacy training so that they are able to read and write and maintain their own bank accounts and savings. In the tribal areas, the trust collaborates with other organisations to teach women agricultural skills; this helps to improve their food security.

In the groups, women also learn eye care and health awareness messages which they in turn convey to their families and the rest of the community. Women who are very motivated and have good communication skills are trained as primary eye care workers or community health workers. Primary eye care workers are able to treat people at the community level or refer them to the nearest base hospital. Community health workers are trained to provide care that is complementary to eye care services, such as nutrition education, health education,

and so on. Both types of workers are able to detect eye health problems at the community level.

Since these workers are from the community itself, their services are readily available, accessible, and acceptable to other women; this helps to fight gender inequalities in providing eye care services to those women who usually do not seek eye care for themselves or their children, especially their daughters.

Recently, the trust has started to send a small number of men and women from both Mumbai and Dang to train as vision technicians at LV Prasad Eye Institute. This gives community health workers and primary eye care workers the opportunity to take on a larger and more specialised role in eye care. The trust aims to establish vision centres, staffed by these vision technicians, in each area so that good quality eye care services are available within the community itself.

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### What can we do?

- Talk to women and mothers about the eye health of their children. Encourage them to bring children for treatment and help them understand what they can do to improve the likelihood that their children will have good vision.
- Support initiatives to improve literacy among women and to train them in income-generating activities.
- Target health education at different generations: include grandmothers (through 'granny groups') as well as children. Role playing and stories can be used to teach children to adopt positive eye care practices which they will pass on to other children and to their families.
- Involve key community leaders and representatives of self-help groups when designing projects to create awareness of eye care.
- Take care not to exclude men. Involvement of women in income-generating activities, for example, can result in men feeling excluded and resentful, especially when projects focus only on women. It is important to include men as doing so will ultimately benefit the family and also prevent feelings of exclusion and resentment.



# Reaching women in Egypt: a success story



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Women in Egypt are more likely than men to suffer from low vision or blindness from avoidable causes.<sup>1-3</sup> This is, in large part, because women are not using eye care services as frequently as men, especially in rural areas.<sup>4-5</sup> A 2002 community-based survey of 4,500 people in Al Minya Governorate, Upper Egypt showed that the prevalence of cataract in women was double that in men and that trachomatous trichiasis was four times as prevalent in women as in men.<sup>3</sup>

Egypt has a large number of eye care providers, even in rural and suburban areas, but a very low uptake of eye care services. On the provider side, this is due to poor clinical outcomes and poor interaction with patients, both of which contribute to fear of surgery. On the patient side, low uptake is due to lack of family support, stigmatisation, and the fact that older persons (who are more likely to be visually impaired or blind) are less able to influence decisions within households. Many also believe that they are too old for surgery. As a result, few patients actually seek eye care.

From formative research conducted in Al Minya, we know that women face particular difficulties in accessing services:

- They are less aware of services, in part due to higher illiteracy rates.
- They have more limited access than men to the family's financial resources.
- They have greater fear of surgery.
- They have more responsibilities towards their home and children, making it difficult for them to leave home.

**Table 1. Al Minya community survey 2002: prevalence of cataract and trichiasis**

No. of people presenting	Men (%)	Women (%)
Cataract	142 (29.1)	346 (70.9)
Trachomatous trichiasis	37 (20.0)	148 (80.0)
<b>Total</b>	<b>179 (26.6)</b>	<b>494 (73.4)</b>



**Focusing on women within households. EGYPT**



**Talking to female students in one of the intervention villages. EGYPT**

## Addressing the problem

Based on the results of the 2002 community survey in Al Minya and the formative research later conducted, a multidisciplinary team from Al Noor Magrabi Foundation in Egypt was formed to investigate the effectiveness of an integrated programme to improve the eye health of women in the region. Funding was provided by the Canadian Institute for Health Research and Al Noor Magrabi Foundation; international consultants from the University of British Columbia and the Kilimanjaro Centre for Community Ophthalmology provided support.

The team identified two intervention villages (population 12,000 each) in the Samalout district in Al Minya governorate and two similar villages in the same district to act as controls. At the time of the intervention (2006-7), the available eye care services consisted of primary health care units in each village, staffed by a general

medical practitioner who could refer eye patients to Samalout Eye Hospital or Al Minya Eye Hospital. Both hospitals conducted cataract and trichiasis operations; however, only two cataract operations were conducted per day and only Snellen trichiasis surgery was possible (a technique known to have a high rate of recurrence).

The intervention had two major components: using women to reach women in the community and strengthening the local eye care system.

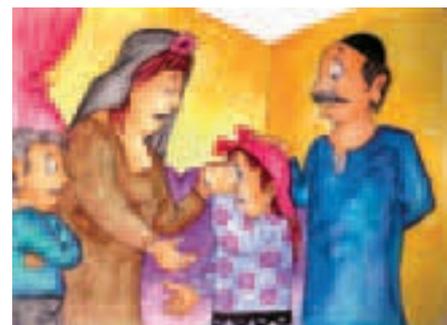
## 1 Using women to reach women in the community

As a first step, the team established a good relationship, through various meetings and presentations, with local policy makers, local health authorities, community leaders, local non-government organisations (NGOs), and local health and eye care providers. This enabled us to work directly with communities to identify the best people to assist with the intervention.

The team chose to use women to reach female community members in the intervention villages, as they would be able to enter homes and meet with women without coming into conflict with regional customs. Candidates with previous experience in community development projects were selected and trained by the authors over a period of three days.

A total of 42 women were trained, of whom 30 were finally selected. The women, known as health visitors, visited a total of 2,354 households (90 per cent of the population in the two intervention villages) from March to December 2007.

During each visit, health visitors explained to women that saving or restoring their own sight would benefit the whole family. They also talked to husbands, fathers, and sons about the importance of seeking eye care for the women in their household. Each family received a variety of educational materials, including a calendar with illustrations relating to eye care.



**One of the illustrations used in the health education materials given to families. This formed part of a story about a family with trachoma. EGYPT**

During the same visit, health visitors assessed vision using E charts and looked for signs of cataract and trichiasis. They recorded the names of people who needed further care and referred them to the local hospital (Samalout Eye Hospital).

In total, the health visitors identified 563 people who needed eye care services: 302 with cataract, 97 with trichiasis, and 164 with other eye conditions. Overall, 72 per cent of those who needed eye care services were women.

Community-based organisations helped with transport to hospital by providing financial and logistical support. In many instances, the health visitors themselves, thanks to their knowledge of the local community, were able to arrange transport and accompany community members on the day of their appointment.

## 2 Strengthening the local eye care system

The nearest hospital, Samalout Eye Hospital, needed additional equipment and instruments as well as more consumables in order to cope with the expected increase in demand. The community also lacked trust in the hospital, which meant that the team needed to provide training and support to improve the quality of services.

The team donated five cataract sets and many other surgical instruments to the hospital. Of the four ophthalmologists there, two received training at Magrabi Hospital in Cairo to upgrade their skills. The training included improved techniques in diagnosis and small incision cataract surgery. Separately, all eye department staff members were trained to manage patients and communicate with them better in order to improve patients' experience at the hospital. Staff members were also informed about the project and about the need for more women to receive eye care.

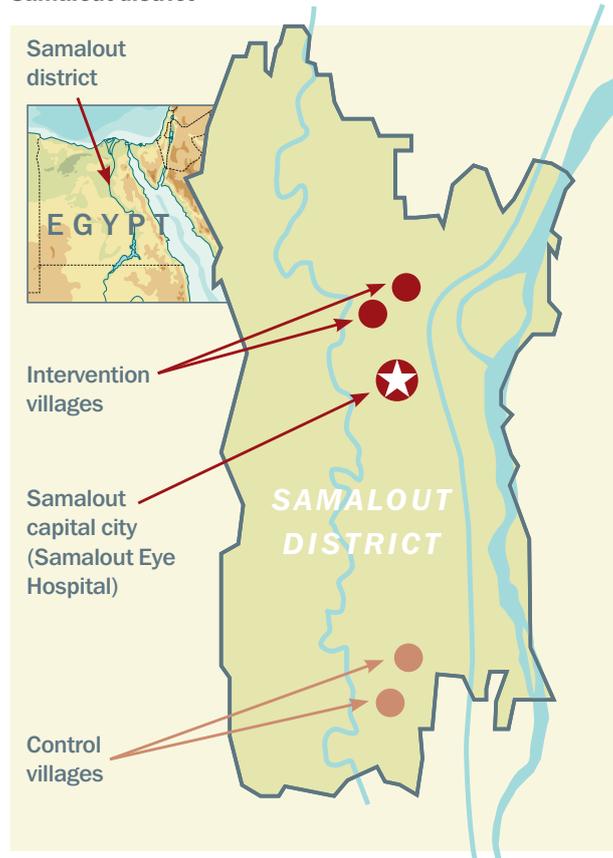
Experienced ophthalmologists from Magrabi Hospital, Cairo assisted and supervised the first 132 operations at Samalout Eye Hospital; this further helped to build the skills and confidence of local surgeons.

In addition, a system was developed to increase the number of outpatient visits per day and the number of operations that could be performed in one day.

## Impact

To measure the reduction in blindness of both men and women, we conducted surveys before and after the intervention in both the intervention and control villages. A calculated sample of 269 adults in the intervention villages and 269 in the control villages were surveyed.

**Figure 1. Location of intervention and control villages in Samalout district**



There were statistically significant improvements in the eye health of women in the intervention villages:

- The prevalence of blindness (visual acuity [VA] <3/60) had decreased by 9.0 per cent ( $p = 0.006$ ): from 12.2 to 3.2 per cent.
- The prevalence of visual impairment (VA <6/18 to 3/60) had decreased by 14.1 per cent ( $p = 0.01$ ): from 45.5 to 31.4 per cent.
- The prevalence of cataract had decreased by 18.4 per cent ( $p = 0.0003$ ): from 35.6 to 17.2 per cent.
- The prevalence of trichomatous trichiasis had decreased by 8.2 per cent ( $p = 0.0012$ ): from 11.9 to 3.7 per cent.

The eye health of men in the intervention villages had also improved, with statistically significant decreases in both visual impairment and cataract:

- The prevalence of visual impairment (VA <6/18 to 3/60) had decreased by 13.7 per cent ( $p = 0.0024$ ): from 32.7 to 19.0 per cent.
- The prevalence of cataract had decreased by 13.2 per cent ( $p = 0.021$ ): from 23.6 to 10.4 per cent.

There were no statistically significant changes in the prevalence of blindness, visual impairment, cataract, or trichomatous trichiasis among men or women in the control villages.

### Increased awareness

Between November 2006 and mid-2008, awareness of blinding diseases and gender-

sensitive approaches had significantly increased at both community and political level. With increasing awareness, more volunteers and community leaders (including two local NGOs) became actively involved in eye health education activities. Government leaders, including the governor of Al Minya and Egypt's deputy minister of health, became more dedicated to combating blindness in the district. They encouraged relocation of ophthalmologists to rural areas, developed mechanisms for early detection and referral of cases from primary health care units, and assessed hospital needs in terms of equipment, training, and facilities.

### Improved capacity

As a result of the interventions at Samalout Eye Hospital, more outpatients were seen and a higher volume of operations with good outcomes were performed in 2008 than in 2006, before the intervention.

The average number of outpatients per day increased from 275 to 425, while the number of cataract and trichiasis operations per year increased from 289 to 896. Of the cataract operations performed on

people from the intervention villages, around 67 per cent were on women.

## Conclusion

Although this intervention focused on women, men also benefited. In addition, we have learned that people should be supported in seeking services, for example by helping them with transport. Health systems should also be strengthened to absorb the increased demand for services; otherwise, communities may get more frustrated and mistrust eye care providers. We believe our project was successful because it combined health education, capacity building of local providers, and breaking down of barriers in a single, integrated programme.

*The authors would like to thank Ken Bassett and Paul Courtright for their input into this article.*

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# Trachoma and women: latrines in Ethiopia and surgery in Southern Sudan



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Trachoma is an infectious disease of the eye caused by the bacterium *Chlamydia trachomatis*. Bacteria can spread via an infected person's hands or clothing and may be carried by flies that have come into contact with discharge from the eyes or nose of an infected person.

Infants and children below school age are more likely to be infected. Since trachoma is transmitted through close personal contact, it often infects children in entire communities.

Although children are more susceptible to infection, the painful and often blinding complication of trachoma – trachomatous trichiasis – usually does not appear until adulthood. Trachomatous trichiasis is the result of repeated infections by *Chlamydia trachomatis* which cause scarring of the inner surface of the upper eyelid; this eventually causes the eyelashes to turn inward and scratch the cornea, causing corneal opacity and pain. Unless this process is halted early enough, a person with trachomatous trichiasis will become blind.

WHO recommends the SAFE strategy to control trachoma:

- **Surgery** to reverse the in-turning of the eyelid and eyelashes, relieving pain and sometimes preventing blindness.
- **Antibiotics** (azithromycin) to treat active trachoma and decrease the burden of infection in a community.
- **Facial cleanliness** or the incorporation of good hygiene practices, including hand washing.
- **Environmental improvements** to reduce the transmission of the disease, such as latrines (to reduce flies) and water for face and hand washing.

Trachomatous trichiasis affects nearly twice as many women as men. The SAFE strategy should be targeted at all people in areas where trachoma is endemic, but specifically at women and children in order to address this inequality.

Although there may be an underlying biological reason that more women are affected by trachoma and trichiasis, the role of women as childcare providers is a likely cause. In most countries where trachoma is endemic, girls grow up in environments where one of their primary activities is taking



A demonstration latrine in a school is built of mud, grass, wooden sticks, and various household items. ETHIOPIA

care of their younger family members and siblings. This continues into adulthood, with women carrying the main responsibility of caring for children. During their lifetime, women therefore spend more time in direct contact with children who may be infected.

Ethiopia and Southern Sudan are two locations with an exceedingly high burden of trachoma. Projects focusing on environ-

mental improvement (in Ethiopia) and increasing access to surgery (in Southern Sudan) have made significant progress towards reducing the impact of the disease on women. These examples show how trachoma programmes can address the particular needs of women while designing interventions aimed at eliminating blinding trachoma in the community as a whole.

## 1 Latrines in Ethiopia

Traditionally, community members in the Amhara region of Ethiopia go to the woods or fields to defecate. Women in particular are discouraged from defecating or urinating where they could be seen during the day and usually have to wait until the night to relieve themselves.

As part of the implementation of the full SAFE strategy, the government health office in the Amhara region worked with its partners to encourage communities to construct household pit latrines. Demonstration latrines were built in district health centres and primary schools to illustrate the ease with which a latrine can be constructed using



Paul Emerson tests out a household latrine's hand washing station. ETHIOPIA

Lisa Rotondo

Lisa Rotondo

materials readily available in the community. This project was highly successful: communities built more than ten times the expected number of latrines.

After investigating the reasons for this unexpected success, the programme discovered that it was women who championed latrine construction in their homes and communities. They encouraged their husbands and family members to work together to clear land near their homes, to dig pits, to gather local resources, and to build structures to enclose the pits. Widows and the disabled were helped by able-bodied friends and relatives. Latrine structures consisted of whatever materials a family had on hand: sticks, mud, tree branches, gourds, plastic sheeting, and so on. Many families constructed a hand washing station, also made of local materials, next to the latrine to encourage proper hygiene.

Using a household latrine reduced the population of flies transmitting the bacteria that cause trachoma. The privacy provided by the latrines also allowed women the freedom to relieve themselves when they needed to during the day and improved their safety as they no longer had to go far from their homes after dark. This helped to address some of the inequalities women faced in their homes and communities.

By actively leading the latrine construction movement, women have not only helped themselves, but have served their communities in the fight against trachoma. The trachoma programme has since used the knowledge gained from this experience to continue to address gender issues in trachoma and target latrine promotion programmes at women.

The Carter Center Southern Sudan



**Community members wait for trichiasis surgery services. SOUTHERN SUDAN**

## 2 Improving access to surgery in Southern Sudan

The prevalence of trachoma in Southern Sudan is very high. As in many trachoma-endemic areas, women are at greatest risk of being blinded by trichomatous trichiasis.

Southern Sudan is a very poor, rural region, where most people are subsistence farmers. In such an environment, a woman with advanced trichiasis becomes a burden to her family as she is unable to tend to her household chores, care for children, or contribute to the family economy. However, it is precisely these responsibilities that can

make it difficult for a woman to leave her home and travel to a place where eyelid surgery is offered before she becomes irreversibly blind.

If families are not aware that a woman's trichiasis can be treated, or if it is not possible for such a woman to go where she can receive treatment, there is a risk that she will be abandoned by her family. It is therefore important that programmes do everything within their power to ensure that women and their families are aware of the services available and are able to make use of them.

The Carter Center is supporting a programme by the Southern Sudan Ministry of Health to improve access to surgery. In Jonglei State, the project has constructed a primary eye care clinic and trained local nurses in trichiasis surgery. After certification, the new trichiasis surgeons were provided with surgical instrument kits and consumables.

The local community decided where the clinic should be located; they chose a place that is easily accessible year-round and that is known to many communities.

Surgery is offered free of charge, reducing the barrier of cost, and is provided during routine services at the clinic and during outreach campaigns.

The clinic has been a successful mechanism for reaching the large population affected with trachomatous trichiasis in Southern Sudan and has become well known in the state, with patients from beyond the original target area walking for days to access its services.

## What can we do?

- **Help to build latrines.** Women with trichiasis often end up without husbands. They are often unable to build latrines themselves and yet they and their children need them most. Identify such women and ensure that communities and professionals assist them with latrine building.
- **Identify the best way to reach women.** Depending on the community's needs, health professionals may need to counsel women and women's groups about the importance of treatment. They may also need to talk to the men and elders of the community about the importance of treatment for women and how this can benefit families and the community. There are women's groups in many communities; encourage them to coordinate women who can travel to clinics together.
- **Choose the best location for clinics.** Try and place surgeons in areas of high prevalence. Consider ease of access for patients and for delivery of supplies, as well as the availability of basic facilities such as clean water and latrines.
- **Bring surgery to the community.** Outreach campaigns can be organised in schools, religious centres, and other buildings and women can be specifically targeted. Campaigns must be very carefully planned and should include extensive information campaigns (see below), adequate quantities of consumable and non-consumable equipment, and participation by surgeons who are willing and able to operate on many patients each day.
- **Inform communities about services.** Tell communities repeatedly where their nearest surgical service is, the times when surgeons operate, and the exact dates of surgical outreach campaigns. Use loudspeakers in markets and ask for help from community leaders, religious centres such as churches and mosques, and schools (schools can encourage children to inform their mothers about surgical services). Attendance will improve if communities are also told that surgery is free.
- **Provide high quality surgery.** Several studies have shown that the risk that trichiasis will recur varies from one surgeon to the next. It is therefore essential that surgeons are well trained and certified and regularly receive refresher training. This is the best way to avoid recurrence and other complications. Patients, and particularly women, may not attend clinic again, so it is essential that they receive a high quality operation when they do come. The importance of postoperative eye care should be explained to patients and their families so as to reduce the risk of infection.



# Women health workers: improving eye care in Pakistan



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In Pakistan, female health workers (known locally as a 'lady health workers') have formed the backbone of the primary health care system for the past fifteen years.

These women are members of the communities they serve and are responsible for 150–200 households (around 1,000 people) each. They provide primary health care with a focus on reproductive health and family planning.

During the day, lady health workers visit women at their homes; in the evenings, community members who need help go to their local lady health worker's home (known as the 'health house') for health advice and basic care, including first aid.

Using women in this role is very helpful in a country such as Pakistan, where direct interaction between women and men is not encouraged. When a woman in Pakistan wants to consult a male health worker, one of her male family members is expected to accompany her. As male family members often have to work, this can make it difficult for women to make use of eye care and other health services. Lady health workers have the advantage of being able to visit women in their homes, even when male family members are at work.

## Eye care training

Although eye care has been included in lady health workers' responsibilities since the beginning, it has not been a priority. Thanks to the renewed commitment<sup>1</sup> to eye care by Pakistan's national government in recent years, however, there has recently been a greater emphasis on eye care in the training of lady health workers.

Lady health workers undergo three months of classroom training in primary health care, followed by field work lasting twelve months.



Jamshyd Masud

**Samina became a lady health worker in 1996 and is now a master trainer. PAKISTAN**

In the classroom, lady health workers receive between three and five days' training in primary eye care. Although the time allotted to eye care has not increased, the training has recently become more in depth and a wider range of eye conditions are covered.

During their year of field work, lady health workers interact with communities who have eye problems; they also receive one or two additional days' hands-on training in community eye care while in the field. The aim is for them to better understand common community eye health problems such as foreign body injuries, cataract, conjunctivitis, and trachoma. They

also learn to perform vision screening and talk to community members about health and hygiene practices.

Until recently, training had been provided by ophthalmologists based in district community eye care programmes. In 2007, however, Sightsavers International started a national programme to develop master trainers within the National Programme of Family Planning and Primary Health Care (the programme responsible for lady health workers); these master trainers now conduct all training of lady health workers in

Pakistan. A training manual in the local Urdu language has been developed in consultation with all parties and was approved by the national eye health committee.

On completion of their primary eye care training, lady health workers are able to perform basic vision assessments (they are given E charts to use); they are also able to deal with conjunctivitis and foreign body injuries. They can screen patients for cataract, trachoma, low vision, and childhood blindness and when necessary they refer community members to nearby eye care services.

## Impact

In the Federally Administered Tribal Areas (FATA), where the new eye care curriculum was piloted and where it had been taught for five consecutive years (2001–2005), we found that lady health workers dealt with more than three times as many eye patients as colleagues in other provinces who had not yet received the training. The

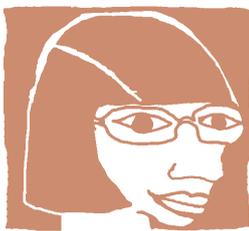
programme will be evaluated on a national level in November 2009.

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## Useful facts

- There are 80,000 lady health workers in Pakistan at present; the government has committed to add another 20,000 by the end of 2009.
- Lady health workers are required to have at least eight years of schooling, although most have ten years. The position is advertised locally and applicants are interviewed.
- On average, a lady health worker will visit five households every day; her aim is to visit each house once a month. Workers will visit pregnant women and those with newborn babies two or three times per month.
- At present, a stipend of about US\$ 40 per month is paid to each health worker; their remuneration package is currently under review.
- Supervisors manage groups of 15–20 lady health workers each. They spend a day with each health worker per month to assess her work. They also assess lady health workers' knowledge and skills against the prescribed checklist developed by the programme.



# Gender differences in presbyopia



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Presbyopia is the loss of lens accommodation with age that results in an inability to focus at near distances. It is receiving growing attention because of the recognition that good near vision is needed to accomplish a broad range of tasks, not only reading and writing.

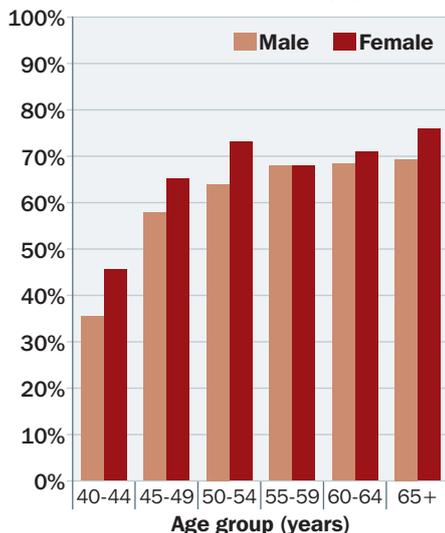
Research shows that there are differences between men and women in the prevalence, age of onset, and severity of presbyopia,<sup>1</sup> in the types of tasks for which men and women use near vision,<sup>2</sup> and in the ability of men and women to afford spectacles for correction of presbyopia.<sup>3</sup>

## Prevalence, age of onset, and severity

The prevalence of presbyopia in low- and middle-income countries is not well known, but several studies have indicated that the prevalence is higher among women:

- Morny, using hospital chart reviews, found a prevalence of 65 per cent in Ghanaian women.<sup>4</sup>
- In southern India, Nirmalan et al. found a prevalence of 55 per cent in subjects aged 30 years and older.<sup>5</sup> The prevalence of presbyopia increased with increasing age and women had 40 per cent higher odds of being presbyopic.

**Figure 1. Prevalence of presbyopia by age and gender in a rural Tanzanian population<sup>1</sup>**



Prakash Tyagi, GRAVIS

## Outreach camps are one way to reach women who need near vision spectacles. INDIA

- Duarte et al. in Brazil estimated the prevalence of presbyopia in 3,000 adults 30 years and older at 55 per cent.<sup>6</sup> Once again, age and female sex were associated with higher prevalence.
- Age-adjusted data collected during the authors' study of 1,709 people aged 40 and above in rural Tanzania showed higher prevalence among women than men (Figure 1). In multivariate analysis, women had 46 per cent higher odds of being presbyopic (defined as the ability to read N8 at 40 cm using a logMar E chart).<sup>1</sup>

Pointer, in his clinic-based study, observed that presbyopia affected women earlier than men.<sup>7</sup> Our study showed that women also had more severe presbyopia than men across all age groups.<sup>1</sup>

## Impact on women

The authors' study in Tanzania showed that, in rural communities where near vision tasks other than reading and writing are predominant, uncorrected presbyopia had a substantial impact on quality of life.<sup>2</sup>

We found that women used near vision for lighting and adjusting lamps, winnowing grain, sorting rice, weeding, sewing, cooking food, and dressing children. Men reported using near vision for lighting and adjusting lamps, reading, writing, harvesting, and weeding. Nearly 80 per cent of people with presbyopia reported having problems with near vision and 71 per cent were dissatisfied with their ability to do near work. Women were just as likely as men to report problems. No other studies to date have examined the tasks people use near vision for in rural settings.

## Intervention

Spectacles offer a safe, effective, and economic option for the correction of presbyopia. However, there is little research on the determinants of, and barriers to, the use of near-vision spectacles.

Only six per cent of the participants with presbyopia in our study in Tanzania had corrective spectacles. Almost all these

participants were men.

In Timor-Leste, among those who were presbyopic, 31 per cent of men and 21 per cent of women had spectacle correction.<sup>8</sup>

In our study in Tanzania, a high proportion of participants (69 per cent) were able to afford spectacles at a price that covered the cost and shipping of the spectacles. Men were more likely to be able to afford spectacles, whereas a higher proportion of women needed to rely on another person to help them afford spectacles.

In Timor-Leste, 25 per cent of men compared to 15 per cent of women were willing to pay US \$3 for spectacles (age-adjusted prevalence).<sup>8</sup>

The majority of participants in our study in Tanzania did not know where to get spectacles. Women were less likely to know than men. Among those (both men and women) who knew where to go, a third could not afford the means to travel to a location where spectacles could be obtained. Once again, women were less likely to be able to afford the travel.

## Conclusion

Women have a higher prevalence of, and more severe, presbyopia. Despite this, women in low- and middle-income countries are less likely to have spectacle correction. Men and women have different needs for near vision but are equally likely to report problems with daily activities due to near vision impairment. However, women are less likely to be able to afford correction and less likely to know where to get spectacles. These gender differences represent additional challenges for presbyopia correction programmes.

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# Cataract surgery: ensuring equal access for boys and girls



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In many low- and middle-income countries, cataract is the leading cause of avoidable blindness among children.<sup>1</sup>

Urgent surgical intervention is necessary if children with cataract are to regain their sight. If children are born with cataracts or if cataracts occur while children are very young, the visual pathways in their brain will not develop normally. Some children may therefore be visually impaired or even blind after their cataracts are removed, especially if there has been a long delay. Fortunately, even if their visual acuity is poor after surgery, most children will regain functional vision; this will enable them to be active and independent.

In order to help children make the best use of the vision they have after cataract surgery, follow-up services are essential. Children may need spectacle correction for near and distance vision as well as low vision devices (optical and non-optical).

Ideally, follow-up should continue for a long time, as children's needs for low vision devices will change as they grow older and want to do more visually challenging tasks. It is also important that potential complications such as thickening of the posterior capsule, development of opacity in the visual axis, glaucoma, or retinal detachment are diagnosed and managed in time.

## Background

In Tanzania, many children are not brought for surgery in a timely fashion and follow up is often poor. Research at Kilimanjaro Christian Medical Centre (KCMC) has shown that girls are more likely than boys to be negatively affected<sup>2-4</sup>:

- Only half as many girls as boys received cataract surgery.
- Girls tended to be brought for surgery later than boys.
- Girls who did receive surgery were less likely than boys to be brought for the appropriate two-week follow-up visit (36 per cent of girls vs 64 per cent of boys).

In order to understand why girls were at such a disadvantage, we looked at gender differences in data we had collected during two qualitative studies in Tanzania. In the first study, we had interviewed 117 parents and guardians of children brought for



Rosa Isaya Moller  
(three years old)  
before her cataract  
operation. TANZANIA

Elizabeth Kishiki

cataract surgery at KCMC between September 2002 and November 2004; our aim had been to uncover why parents sometimes took a long time to bring children for surgery. In the second study, we had conducted interviews with 22 of these parents or guardians, selected for either making good or poor use of follow-up services, in order to understand why follow-up was often poor.

The reasons parents or carers took a long time to bring children for surgery included the following:

- They did not recognise the disease. Most parents or carers were not aware that a child could have cataract (the same was true for health workers in the communities as well).
- They could not agree on what to do and/or when to do it.
- They had fears about cataract surgery based on mistaken beliefs about what it entailed (for example, that the eye would be removed and then replaced); they also had concerns about the risks associated with surgery and with the stay at the hospital.
- They were concerned about costs (direct and indirect) and the distance they would need to travel.

In general, the reason parents and carers did not bring children for follow-up was because they did not understand that children, unlike most adults, often need low vision devices or spectacles after cataract surgery. They usually saw some improvement of vision after the intervention, and when children could see enough to function, parents were unlikely to consider it necessary to go back for follow-up (which seemed to be true for girls in particular).

## Gender differences

When we analysed the results of both studies according to the gender of the parent and the child, we found the following:

- Fathers (and some mothers) tended to give preference to boys, especially when family resources were scarce.
- Mothers often did not have the power to make decisions about health care for their children; however, those with higher education levels and more financial independence were more likely to be able to influence decisions.
- When asked what they would do if they were able to make such decisions, most mothers wanted to treat their children equally or give preference to daughters over sons.

## A preference for boys

In poor or struggling communities, sons are often seen as a source of income and financial security for parents when they get older, whereas girls are seen as a financial burden. This can mean that boys will be more likely than girls to be taken to a clinic for health care.<sup>5</sup> It is certainly true in Tanzania, where many families struggle to provide food, shelter, and education for all their children. When difficult choices have to be made, boys often receive preference over girls. The cost of surgery is not the only consideration: time away from work, the need to find someone to look after other children, and long travelling distances need to be considered as well.

From our gender analysis, it was clear that fathers tended to give priority to boys. Fathers often considered that the boy would be able to contribute to family resources and would, in the future, look after his parents.



Rose Isaya Moller with her new spectacles, after both cataracts were removed. TANZANIA

Elizabeth Kishiki

## What can we do?

Experience in Tanzania<sup>1</sup> has suggested that the following strategies can improve access for all children; this will mean that the number of girl children likely to receive cataract surgery will also increase:

- Mass media efforts (especially radio) may provide the first opportunity for rural villagers to learn about the need for early referral of young children with vision loss.
- Many health workers are not familiar with the need for early referral of children with a 'white pupil'. Brochures and posters have been useful as a continuing medical education tool.
- Cost (direct and indirect) is often the most important barrier preventing use of surgical services by children. Transport reimbursement (for parents and children) is often essential, particularly for parents living quite far away from tertiary hospitals.
- Cell phone penetration has grown significantly in many low- and middle-income countries and phone follow-up with parents has proven to be a very useful strategy for reminding parents to bring children for follow-up visits.

In addition, there are two strategies that will have a more direct impact on improving access for girls:

- Evidence suggests that it is helpful to use key informants to identify and refer children who need eye care. More girls are identified this way than when relying on parents alone to recognise the need for surgery.
- Paediatric ophthalmology tertiary facilities can benefit from having a dedicated childhood blindness coordinator who can provide high quality counselling and support services for parents and guardians. With the help of such a coordinator, parents learn the benefits of early surgery, follow-up, and rehabilitation and become more engaged in the care of their children, particularly girls. Using a tracking form (showing when the operation was performed and all follow-up dates) helps the coordinator to monitor follow-up, counselling needs, and patient information efforts. In order to support the coordinator's work, it is important to link clinical services at paediatric ophthalmology units with general ophthalmology units and other eye care providers as well as with educational and rehabilitation services.

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*"[...] the boy will be responsible for his family while the girl may stay at home with her mother. [...] I would send the boy (for surgery) because he will be helpful to me in the future but the girl will be married."* (Interview 17 with Jo's father, primary school, employed in a coffee plantation, waited five years before bringing his son for cataract surgery)

However, choosing boys over girls was not exclusive to fathers. Some mothers did not hesitate to expose their preference for 'investing' in a son's health rather than spending money on a girl who would eventually get married and leave.

*"I would send the boy."* Q: Why?

A: *"Because a boy is more helpful in the society than a girl."* (Interview 16 with Liz's step mother, peasant, primary school, waited one year before bringing her step-daughter for cataract surgery)

### The power to make decisions

Many women are still subject to their husbands' will and wait for his permission to access health care and services for themselves and/or for their children.<sup>5,6</sup>

From the 117 interviews we conducted for the first study, it was clear that mothers' influence over the decision making process was closely linked to whether boys or girls were brought for cataract surgery. Less educated women and women with very limited personal financial resources had less capacity to influence decision making.

*"I depend on my husband for everything because I am not employed, so I think it is hard to get the money. [...] I had to wait for her father to make a decision [...] I would*

*have brought her earlier but it is because her father was not ready."* (Interview 13, with Ma's mother, unemployed, primary school incomplete, waited more than ten years before bringing her daughter for cataract surgery)

Our analysis showed that women's level of education, their socioeconomic status, and the decision-making power they had within their household and their community all played a major role in determining whether and when their children would receive cataract surgery and whether they would be taken for follow-up visits.

We found that, the more educated the parents were (especially mothers), the higher the chances were that:

- a child would be brought for surgery in a timely fashion
- a girl would be brought for surgery (and follow-up), regardless of opposing views from her father
- a child would be brought for post-operative follow-up.<sup>2-4</sup>

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# Eye care human resources: are there gender issues?

**Paul Courtright**

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In many settings, women make up a sizeable part of the eye health workforce, whether as distributors of ivermectin for onchocerciasis control, surgeons for trichiasis, ophthalmic nurses and nurse assistants, cataract surgeons, or ophthalmologists. There is a small, but growing, body of literature that suggests that, in the eye health care workforce, men and women may not be supported and paid equally and may not have similar performance levels. Why is this, and what can we do?

## Unequal treatment

In low- and middle-income settings, women's roles include caring for children, producing food, and keeping the family together when their husbands are away from home in order to work or find work. The participation of women in the design and implementation of community eye care programmes is therefore essential.

Despite the intention of the African Programme for Onchocerciasis Control (APOC) to actively encourage participation of women, in most settings the majority of community-selected distributors are men, often because membership in community decision making bodies is male dominated.<sup>1</sup> It was also noted that female distributors may receive less community support, whether financial or in-kind in nature.<sup>1</sup> In contrast, the extremely successful Nepal vitamin A programme is built exclusively on female community health volunteers.<sup>2</sup> Differences may be traced to the fact that vitamin A distribution is targeted at children, traditionally considered to be the responsibility of women, whereas ivermectin benefits men as well as women and children.

## Women's performance and productivity

In eastern Africa, an assessment of productivity of cataract surgeons who were not medical doctors showed that female surgeons were half as productive as male surgeons. Compared to male surgeons, female surgeons were less likely to have adequate nursing support or to have sufficient instruments.<sup>3</sup> Interviews with female surgeons revealed that they had greater difficulty in negotiating with hospital directors (all men) to obtain the support they needed to do their work. Similarly, in Tanzania, female trichiasis surgeons were less productive (median five operations per year) than their male counterparts (median eight operations per year).<sup>4</sup>

A Fred Hollows Foundation evaluation of



Female eye care workers prepare for surgery. LIBERIA

their primary eye care programme at health centres in Rwanda suggested that trained female health workers had lower levels of service delivery than their male counterparts. There appeared to be many reasons for this difference, including those related to traditional views of the roles of women and those related to the work environment.

Patients' preference to receive health care from one gender or another is commonly reported for female-specific health conditions. May this also be the case for eye related conditions, as reported by Vijayakumar and colleagues in India?<sup>5</sup>

Although often ignored, traditional expectations of women will have a significant impact on how male and female eye care providers are perceived and respected, as well as supported and supervised. We need to understand these norms better and to address any biases we detect, including our own.

In conclusion, it is helpful to note the following:

- Women eye care workers have the same potential to be productive as their male counterparts.
- Community bias against female eye care workers may affect their performance.
- If women eye care workers receive less support than their male counterparts (in terms of access to equipment and nursing support, for example), their performance will suffer.
- Poor performance (resulting from poor support or patient bias) may reinforce negative perceptions of female eye care workers; this may (wrongly) justify both patient bias and the poor support given to them.

By addressing gender issues in human resource development we will strengthen all of our eye care human resources more effectively. Our eye patients will be the ones who benefit.

## What can we do?

- **Supervisors, managers, and planners** need to be vigilant to ensure equal treatment, support, and access to essential resources for all their eye care staff.
- **Planning of eye care services** needs to take into account any gender biases existing in the community and to make allowances for this; for example, by arranging for female eye care workers to treat female, not male, patients.
- **When promoting eye care services in the community**, it may help to include positive messages about female eye care workers.

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# Lacrimal syringing



**Sue Stevens**

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## Before performing any eye procedure

- Wash your hands (and afterwards too).
- Position the patient comfortably with head supported.
- Minimise distractions, both for yourself and the patient.
- Ensure good lighting.
- Always explain to the patient (and any companion, if appropriate) what you are going to do.

## Reasons for lacrimal syringing

- to check the naso-lacrimal passage for any blockage
- to flush out debris, e.g., lacrimal passage infection.

This technique is also suitable for administering antibiotics to the lacrimal passages and for introducing dye for X-ray procedures.

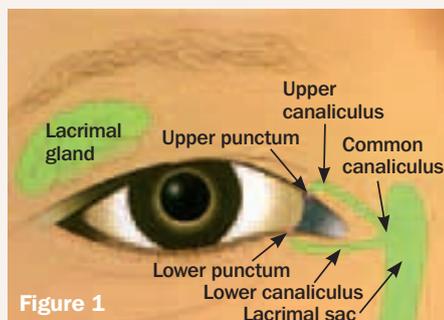
## You will need

- a torch (held by an assistant) or preferably a well-powered lamp
- magnification (e.g., loupes)
- normal saline
- a sterile 2 ml syringe
- a sterile Nettleship dilator
- a sterile lacrimal cannula
- local anaesthetic eye drops
- clean cotton wool or gauze swabs
- a towel
- gloves

**Note:** The pictures do not show gloves being worn; however, the wearing of gloves for all clinical procedures is now mandatory in most centres.

## Preparation

It is important that the anatomy of the lacrimal apparatus is understood before carrying out this procedure (Figure 1).



- Position the adult patient lying down with head supported on a pillow, or sitting with head against the high back of a chair.
- If the patient is a child, you may need to ask your assistant to wrap the child in a sheet and gently restrain the child throughout the procedure.

- Place the towel across the patient's neck to absorb any fluid spillage.
- Check the Nettleship dilator and do not use if there is any damage to the tip.



Figure 2

- With the syringe, draw up about 1 ml of saline and then attach it to the cannula (Figure 2).
- Flush the cannula with a small amount of saline to ensure it is patent.

## Method

- Instil the local anaesthetic eye drops, allowing the drops to fall directly over the lower punctum, and wait about 30 seconds.
- Ask the patient to look upwards and outwards (away from the nose) and to maintain this gaze until the procedure is over.
- With cotton wool or a gauze swab, gently pull down the lower eyelid to expose the lower punctum.
- With the other hand, insert the Nettleship dilator into the lower punctum, following the direction of the lower canaliculus (Figure 3). Gently rotate it a few times and then withdraw the dilator (this dilation will facilitate the insertion of the cannula).

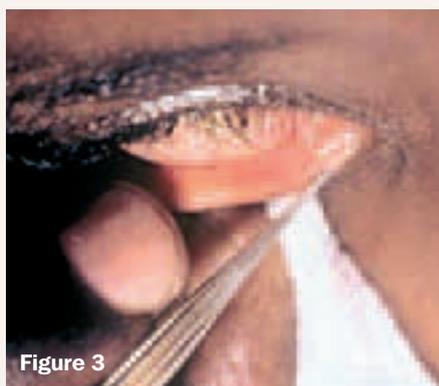


Figure 3



Figure 4

- Take the syringe containing the saline and attached cannula and insert the cannula tip into the lower punctum (Figure 4).
- Inject the fluid slowly, and explain to the patient that they may have the sensation of a salty taste at the back of the mouth and the need to swallow fluid.
- If the patient is not aware of this sensation, it indicates a blockage somewhere in the lacrimal apparatus. The fluid may be seen coming through the upper punctum.

The next part of the procedure requires two people:

- Instil the local anaesthetic drops directly over the upper punctum and again over the lower punctum; wait about thirty seconds.
- Gently raise the upper eyelid to expose the upper punctum.



Figure 5

- Occlude the upper punctum with the Nettleship dilator. The assistant will need to hold the dilator in the upper punctum while the syringing is repeated through the lower punctum as before (Figure 5).
- If the patient still does not experience the salty taste and swallow sensation, this will indicate that the site of the blockage is in the common canaliculus or the lacrimal sac.

Record the findings in the patient's documentation.

## Announcements

### New resource for ophthalmologists

The Ophthalmic News and Education (ONE) Network provides free access to the latest research in peer-reviewed publications as well as lifelong learning tools and other resources. Journals available include *Ophthalmology*, *American Journal of Ophthalmology*, and *British Journal of Ophthalmology*. Apply for access online: [www.aao.org/one](http://www.aao.org/one)

# BCPB

## British Council for Prevention of Blindness

### Call for applications

Applications are invited for British Council for Prevention of Blindness (BCPB) fellowships (worth £60,000 per year for 2–3 years for clinicians wanting to undertake a PhD or MD) and research grants (worth up to £60,000 in total and available to clinicians and researchers). Closing date: 13 November 2009. Visit [www.bcpb.org/training.html](http://www.bcpb.org/training.html) or contact Viv Saunders, BCPB, 4 Bloomsbury Square, London WC1A 2RP. Email: [info@bcpb.org](mailto:info@bcpb.org)

### World ROP Congress 2009

New Delhi, India, 21–23 November 2009. Contact Rajvardhan Azad, World ROP Congress Secretariat, Room No 486, Dr Rajendra Prasad Centre for Ophthalmic Sciences, All India Institute of Medical Sciences, Ansari Nagar, New Delhi 110029, India. Visit <http://worldrop2009.org> or email [worldrop@gmail.com](mailto:worldrop@gmail.com)

## Courses

### Kilimanjaro Centre for Community Ophthalmology, Tanzania

Visit [www.kcco.net](http://www.kcco.net) or contact Genes Mng'anya at [genes@kcco.net](mailto:genes@kcco.net)

**Bridging communities and eye care providers for VISION 2020 in Africa**, 9–13 November 2009. **Target audience:** eye care programme managers, trainers, and key decision makers of national prevention of blindness programmes.

**Organisational and financial management to achieve VISION 2020 in Africa**, 16–27 November 2009. **Target audience:** heads and key decision makers of VISION 2020 planning areas.

### Postgraduate diploma in community eye health

University of Cape Town, South Africa, January 2010. **Target audience:** national VISION 2020 coordinators and district VISION 2020 programme managers.

**Duration:** one year. **Closing date:** 30 October 2009. **Fee:** ZAR 35,000 (US \$3,500). Contact Deon Minnies at [d.minnies@uct.ac.za](mailto:d.minnies@uct.ac.za)

### Paediatric ophthalmology in 2010: clinical practice and its scientific foundations

Institute for Child Health, London, 18–22 January 2010. **Target audience:** ophthalmologists and consultants. **Fee:** £650 (reductions available for low- and middle-income countries). For information, call +44 207 829 8692 or email [info@ichevents.com](mailto:info@ichevents.com)

## Other Community Eye Health Journal editions

### Le saviez-vous ?

La Revue de Santé Oculaire Communautaire est destinée à tous les personnels spécialistes en ophtalmologie. L'abonnement est gratuit pour les lecteurs des pays en développement. Pour vous abonner, envoyez votre nom, profession, adresse et numéro de téléphone à [Paddy.Ricard@Lshtm.ac.uk](mailto:Paddy.Ricard@Lshtm.ac.uk). Vous pouvez aussi écrire: Anita Shah, Revue de Santé Oculaire Communautaire, ICEH, London School of Hygiene and Tropical Medicine, Keppel Street, London WC1E 7HT, Royaume-Uni.

### ¿Vocè sabia?

A edição piloto do Jornal de Saúde Ocular Comunitária está disponível agora em português. Para solicitar a sua cópia, por favor envie seu nome, profissão, onde trabalha e qual função, endereço, número de telefone e email para Andrea Zin, Unidade de Pesquisa Clínica, Instituto Fernandes Figueira-FIOCRUZ, Av. Rui Barbosa 716, CEP 22.250-020, Rio de Janeiro-Brasil ou email [andrezin@iff.fiocruz.br](mailto:andrezin@iff.fiocruz.br)

## Resources

### Community Eye Health Journal

Courtright P and Lewallen S. Improving gender equity in eye care: advocating for the needs of women. *Comm Eye Health J* 2007;20(64): 68–69.

**Kilimanjaro Centre for Community Ophthalmology** Presentations, brochures, fact sheets, and reports available for free download. [www.kcco.net](http://www.kcco.net)



### Women and trachoma: achieving gender equity in the implementation of SAFE

Download from [www.cartercenter.org/resources/pdfs/health/trachoma/](http://www.cartercenter.org/resources/pdfs/health/trachoma/)

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### Childhood cataract in Africa

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PO Box 49, St Albans, Herts, AL1 5TX, UK. Tel: +44 1727 853869. Email: [info@talcuk.org](mailto:info@talcuk.org) Website: [www.talcuk.org](http://www.talcuk.org)

### Has the Community Eye Health Journal changed the way you work?

We would like to hear from you – email the editor on [editor@cehjournal.org](mailto:editor@cehjournal.org) or write to *Community Eye Health Journal*, International Centre for Eye Health, London School of Hygiene and Tropical Medicine, Keppel Street, London WC1E 7HT, UK.

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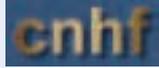
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## Next issue



The next issue of the *Community Eye Health Journal* will be on the theme  
**Corneal blindness**

## EXCHANGE SUPPLEMENT

### Using Peace Corps volunteers in community eye health

**Shawn Barnes**

Co-founder, Outbound Eye Health International, John A. Burns School of Medicine, University of Hawaii, Kakaako, Hawaii 96813, USA

Initiating a community eye health programme in an unfamiliar culture and language can be a daunting task. This report focuses on an underutilised resource for community eye health: American Peace Corps volunteers.

The Peace Corps is a government-sponsored service organisation. At present, there are 7,876 Peace Corps volunteers serving in 76 low- and middle-income countries around the world. Of those who volunteer, 94 per cent hold at least an undergraduate degree and 21 per cent are specifically trained to work in public health.<sup>1</sup> Many volunteers serve in rural areas and all receive two months of intensive language and cultural training in their host countries; they also live at the financial level of those they serve. This represents a significant resource of educated, culturally and linguistically competent, and generally idealistic people who are willing to assist in community health projects. All one need do is ask for their assistance!

#### Linguistic competence

Few eye care professionals have reported making use of this vast resource. However, those who have done so have commented on the logistical, organisational, and linguistic assistance of Peace Corps volunteers in setting up and carrying out eye health programmes in places like Fiji<sup>2</sup> and Costa Rica.<sup>3</sup> The cultural and linguistic competence of these volunteers can be of great assistance in community outreach and education.

In July 2009, I co-organised a project on the rural island of Savaii, Samoa, which provided full eye examinations for over 1,100 people. Screening was performed in 12 different villages around the island with no national government assistance. All logistics, liaison, and communication with villages were done by current or former Peace Corps volunteers. This provided an



A Peace Corps volunteer performs a basic eye exam. SAMOA

Shawn Barnes

immense advantage as villagers sometimes view national government agencies with suspicion. By contrast, Peace Corps volunteers tend to be viewed as neutral and are generally not seen as any threat to village independence or land ownership.

Therefore, the project was seen to be separate from national government and we were enthusiastically welcomed wherever we went.

In addition to logistical assistance, Peace Corps volunteers became the backbone of the eye examination team. After training in basic examination techniques such as near/far visual acuity, autorefractometry, and use of the tonopen, Peace Corps volunteers were able to assist as technicians in eye examinations. They were also able to explain, in the Samoan language, what the team was doing and why.

Usha Raman recently pointed out<sup>4</sup> that a bottom-up approach to eye care human resources should be emphasised in order to minimise the importance of the single ophthalmologist and maximise the human resource potential of the larger community in need.<sup>4</sup> As long-term residents of these communities, and with linguistic and cultural

competency, Peace Corps volunteers may serve as ideal intermediaries to help build a bridge between outside eye care professionals and the communities they wish to serve, as well as establishing connections to national health services. In addition, participation in a community service project is well in line with the mission of the Peace Corps. I would encourage any eye care professionals planning to work in low- and middle-income countries to find out whether there are Peace Corps volunteers serving in the area and make contact. Most Peace Corps volunteers will be glad to help.

To find Peace Corps volunteers, contact the Peace Corps office in Washington DC ([www.peacecorps.gov](http://www.peacecorps.gov)) and ask to be connected with your local Peace Corps country director.

#### References

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# Equipment repaired is equipment gained

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According to WHO, at any one time, around 50 per cent of medical equipment in low- and middle-income countries cannot be used because of lack of maintenance or spare parts.<sup>1</sup> We have found that unwillingness or inability to repair equipment and put it back in use is also a major cause.

New equipment is made available by different international non-government organisations (INGOs) competing with one another to help users. However, these organisations often do not support users with repairs, nor do they train users in maintenance and repair.

What happens to pieces of equipment that do not work? Usually they remain in the hospital, occupying space needed for patient care; they are sometimes abandoned in open spaces and exposed to the elements.

In 2007, the author was part of a team that ran a two-week biomedical workshop organised by an INGO in a low-income country. On the first day, the author noticed an operating table lying near the hospital garbage pit (Figure 1). He thought something should be done about it before the end of the workshop. On a closer examination the table was found to be of Japanese make, donated to the hospital under a bilateral cooperation programme. It was covered in dust and weeds had grown over it. The base and body were made of thick stainless steel so that the equipment had not rusted, though it had been there for more than a year.

On the eighth working day a suggestion was made to the trainees that they should try putting the table back to use. Eight volunteered but one thought it a waste of time to work on the table, which had clearly been abandoned for a long time.

The table was pulled out of the mud and weeds and shifted to a hard surface. That

Figure 1. An operating table lies abandoned outside a hospital in a low-income country.



V Srinivasan

was a difficult job but heavy rain on the previous night had softened the ground which made the task easier.

We then tried to find out why the table had been abandoned. After a thorough wash with water to remove all the dust and dirt that had accumulated on it, the table was examined. The table could not be raised or lowered as designed, and the obvious conclusion was that the hydraulic system was not functioning. We opened the cylinder that should have oil in it, but found it to be empty.

It is likely that the oil had drained drop by drop and no one had taken serious note of it. Eventually, when the oil level was low, the table had no longer moved up and down. The 'broken' table had then been removed from the operating theatre and left in the open, where the remaining oil had drained completely.

Next, the author and trainees dismantled the operating table part by part and shifted it to the workshop. In the workshop, the parts of the table were cleaned further and all moving parts were oiled. The gasket (the

rubber ring which seals the system) had dried out because the table had been left outside for many months; we oiled it to ensure that the hydraulic system would once again have an airtight seal. We filled the hydraulic system with lubricating oil (poured into the cylinder using a funnel). When assembled, all other functions of the table were found to work as designed (Figure 2).

A thoughtful person in

the hospital had saved the upholstery, and very soon the table was shifted to the operating theatre for use. Due to the hard work of my colleague Poornachandran and the eight trainees, the hospital now has an extra operating table. Equipment repaired is equipment gained! Some of the lessons learned by the trainees were:

- When a piece of equipment fails, not all parts of it fail. One or at most two parts fail and the instrument stops functioning. Locating the fault is the first step. In the present example, it was the hydraulic system which had failed.
- If a piece of equipment stops functioning, careful examination will determine the problem, which can usually be fixed. Availability of spare parts can be a problem, but this may be solved by using locally available substitutes.

In conclusion, all repairable equipment should be repaired but the will to repair is needed.

**Author's note:** With hydraulic equipment such as this operating table, problems can be prevented by regular maintenance. This simply involves smearing the moving parts, as well as the gasket, with oil on a regular basis. Manufacturers often specify the oil that should be used, but that isn't always available in every country. The author recommends using the oil available for use in the gear boxes of motorcycles or scooters; the same oil can be used to lubricate all other moving parts in the table. The hydraulic system in any instrument should be checked periodically. Any leakage of oil, if noted, should be investigated and stopped.

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1. [www.who.int/medical\\_devices/en](http://www.who.int/medical_devices/en)



Figure 2. The operating table after it was cleaned and assembled

V Srinivasan

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# Oculoplastic surgery in Madagascar: a review

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 H Nkumbe<sup>3</sup>  
 OC Backhouse<sup>1</sup>  
 P Bernadin<sup>4</sup>  
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Oculoplastic surgery in high-income countries is now recognised as a rapidly evolving and expanding subspecialty. In low- and middle-income countries, however, most oculoplastic surgery is performed by general ophthalmologists with varying levels of surgical training and experience.

The aim of this study was to review the oculoplastic practices in Madagascar, including the nature of presenting disease and the surgical procedures performed. The study formed part of the initial phase of a training link between Madagascar and Leeds University Teaching Hospitals Trust. We hoped to identify areas of practice that required more specific surgical training. To our knowledge, this is one of the first studies looking specifically at oculoplastic disease prevalence in Madagascar or any African country.

The training link was established between Madagascar and Leeds in 2008 under the auspices of the VISION 2020 Links Programme run by the International Centre for Eye Health and supported by the Overseas Partnering and Training Initiative (OPTIN). A memorandum of understanding was signed by the Madagascar Ministry of Health, the University of Antananarivo, the Malagasy Lutheran Church Health Department, and Leeds University Teaching Hospitals Trust.



Jonathan Norris

## A Malagasy ophthalmologist is trained in oculoplastic surgical techniques while her team observes

The first part of our study consisted of circulating a questionnaire to fifteen ophthalmologists from six eye departments throughout Madagascar. The questionnaire listed oculoplastic procedures related to eyelid, lacrimal, and orbital surgery and ophthalmologists were requested to indicate, from memory, the numbers of each procedure performed in the preceding eighteen months (from April 2007 to October 2008).

The practitioners reported performing 359 oculoplastic procedures in total. Eye removal, both evisceration and enucleation, accounted for 49 per cent of all procedures performed. Orbital implants (for example, coral implants) were rare due to cost. Nearly 20 per cent of procedures involved inserting

a secondary conformer or prosthesis. The least common procedures included ptosis, lacrimal surgery (punctoplasty and dacryocystorhinostomy), and entropion correction; only five surgeons had used skin grafting.

Seventy five per cent of all procedures were performed by ophthalmologists based in the capital.

In the second part of the study, we surveyed all ophthalmologists and related practitioners present at the Malagasy Ophthalmology Society meeting in 2008 (n=33) about surgical interventions for ectropion, entropion, and ptosis.

Of the ophthalmic practitioners who had reviewed ectropion, only 16.6 per cent had performed corrective surgery. Of those who had reviewed entropion and ptosis, 22.7 per cent and 14.2 per cent, respectively, had performed corrective surgery (Figure 2).

For the third part of the study, we reviewed 23 patients who had been collected for us to see in a single day at a government hospital in Antananarivo, the capital of Madagascar (the tertiary ophthalmic referral centre in the country). Table 1 shows the pathology seen. We performed surgery on nine of the patients. Procedures included traumatic lid reconstruction surgery (with free grafts, transposition flaps, and Z-plasty), prolene brow suspensions, upper lid ectropion correction with anterior lamellar repositioning, and lower lid entropion correction and orbital dermis fat graft for postenucleation socket syndrome (PESS). During each procedure, we gave specific training to the local ophthalmic practitioners present. Malagasy ophthalmic practitioners have now begun to perform some of the above procedures.

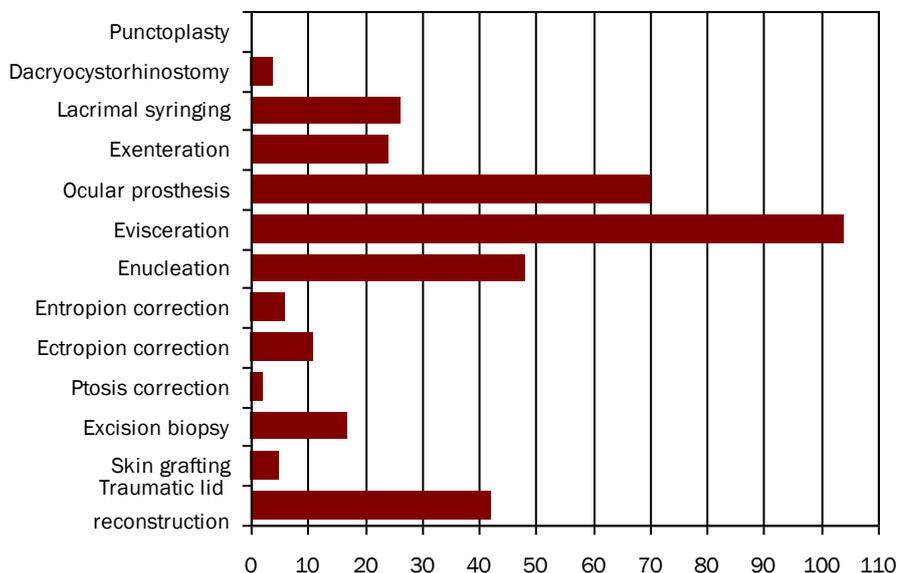


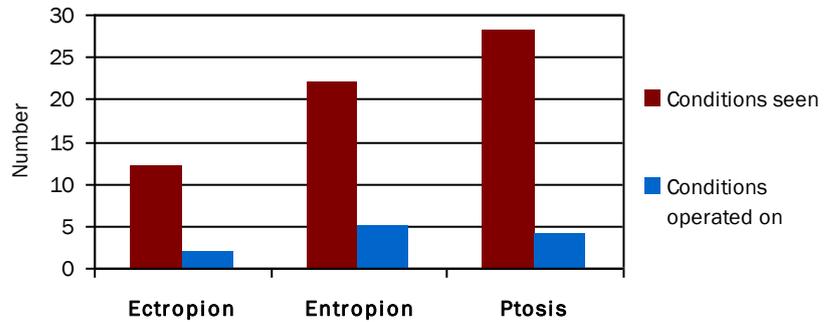
Figure 1. Oculoplastic procedures performed by fifteen Malagasy ophthalmic practitioners

## Discussion

Madagascan ophthalmic practitioners centre their attention on enucleation, evisceration, and exenteration for presumed traumatic and neoplastic causes. Previous studies have indicated that the most common causes for eye removal in African countries is both trauma and orbito-ocular tumours,<sup>1</sup> including retinoblastoma and Burkitts lymphoma.<sup>2</sup> Squamous cell carcinoma also accounts for a significant amount of orbito-ocular neoplastic disease in certain African countries.<sup>3</sup> Infection would be considered another leading cause.<sup>4</sup> Incidentally, when performing two orbital dermis fat grafts for socket atrophy on patients at the government hospital, we found residual uveal tissue in both cases, giving a theoretical higher risk of sympathetic ophthalmia.<sup>5</sup>

Patients in Madagascar are more susceptible to post-enucleation socket syndrome (PESS) because of the lack of orbital implants. Training in both eye removal and orbital dermis fat grafting should help improve practice in the future.

Given the limited resources, lacrimal surgery is rarely performed, presumably because lacrimal pathology is rarely life or sight threatening. Ectropion, entropion, and ptosis are present in Madagascar, but few are corrected surgically. The results for entropion surgery (22.7 per cent) are similar to those for bilamellar tarsal rotation for trichiasis (24.6 per cent) in a study of leprosy patients in Nigeria.<sup>6</sup> In our study, the low surgical coverage was felt to be mainly due to lack of patient awareness. We believe a



**Figure 2.** The number of conditions seen compared with those operated on in the previous twelve months

lack of specific surgical training should also be considered a factor.

We understand that this three-part study was limited by the fact that some of the data obtained regarding oculoplastic procedures was from the practitioner's memory as opposed to a formal log book. However, we feel that we have gained a broad understanding of the current oculoplastic practice in terms of both quantity and breadth of surgical technique. This will allow us to plan future visits and target specific training needs.

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**Table 1.** Presentations seen in a designated outpatient oculoplastic clinic

Case	Age (Years)	Presentation
1	12	Congenital ptosis
2	8	Congenital ptosis
3	30	Malignant melanoma of lower eyelid
4	13	Stevens Johnson syndrome with secondary cicatricial eyelid disease
5	9 months	Congenital ectropion
6	Unknown	Ptosis
7	50	Traumatic eyelid injury
8	22	Previous excision of lacrimal gland lesion and secondary ptosis
9	11	Congenital lid lesion
10	60	Ectropion
11	Unknown	Stevens Johnson syndrome with lower eyelid cicatricial, forniceal shortening
12	30	Traumatic ectropion
13	34	Conjunctival limbal lesion
14	12	Post enucleation socket syndrome
15	..Unknown	Ocular dermoid cyst
16	31	Arterio-venous malformations of eyelid
17	21	Traumatic eyelid injury with lagophthalmos, ectropion, exposure keratopathy
18	86	Entropion
19	52	Entropion
20	37	Traumatic lagophthalmos
21	25	Post enucleation socket syndrome
22	33	Entropion secondary to leprosy
23	26	Orbital gunshot injury