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Published for "Vision 2020: The Right to Sight - India Forum" from International Centre for Advancement of Rural Eye Care, L V Prasad Eye Institute, Banjara Hills, Hyderabad 500 034, India. E-mail: JCEH-India@lvpei.org

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## Extending eye-care in the Thar Desert, India: The GRAVIS experience

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Situated in the north-west India, the Thar is the most densely populated desert ecosystem in the world, being home to nearly 23 million people in the state of Rajasthan alone<sup>1</sup>. Impacted by chronic drought, severe water and food shortages, the Thar is one of the most impoverished and underdeveloped regions of the country. With an average rainfall of about 200 millimeters in a year, survival of human life is challenging in Thar. Agriculture and animal husbandry, the main occupations of the desert villagers, are dependent on scarce water supply.

The region has very poor healthcare infrastructure. High infant and maternal mortality rates, low life expectancy, high prevalence of infectious and chronic diseases and severe malnourishment are some of the major health challenges the region faces. In a recent health analysis conducted by the Independent Commission on Development and Health in India and the Voluntary Health Association of India, major Indian states were surveyed and accordingly the districts of the states are classified under a different Vulnerable Health Index (VHI). Almost all the districts of Rajasthan State and all the 12 districts of the Thar Desert were found "very vulnerable" in the above analysis<sup>2</sup>.

Furthermore, the status of eye-care in Thar is a major concern. Lack of education among rural communities, poor nutritional status of the population caused by recurrent drought and persistent poverty and an unquestionable lack of primary and

specialized eye care services contribute to the complexity of situation. Cataract, glaucoma, refractive errors and infectious ocular diseases are highly prevalent in the Thar Desert. According to the Survey of Blindness in India carried out in 1986-89, the highest prevalence per 10,000 population was reported in the state of Jammu and Kashmir (280) and Rajasthan had the second highest number (224)<sup>3</sup>. The present prevalence of blindness in Rajasthan is estimated to be 2.24% and Cataract is responsible for 84.59% of all the cases<sup>4</sup>. Further, Vitamin A deficiency is also a common problem among the malnourished and drought-impacted rural community of the Thar, contributing to night blindness.

Gramin Vikas Vigyan Samiti (GRAVIS) is an NGO that has been working towards integrated rural development of the Thar Desert communities for the last 24 years. It focuses on organizing rural development initiatives with active community involvement particularly in healthcare, education, water management and agriculture. GRAVIS works in over 800 villages of the Thar Desert. In 2003, GRAVIS took the initiative of organizing a comprehensive, community-based eye-care programme in one of the least developed

districts of the Thar Desert, namely Jaisalmer. In partnership with Sightsavers' International, GRAVIS set up the first, fully equipped, secondary level eye-care unit in a rural setting of the Thar Desert. Alongside, the organization took up a Community Eye Health (CEH) Project in Sankra block of Jaisalmer district benefiting a population of nearly 210,000 people residing in over 200 villages. The CEH project focused on educating the communities on eye-care, capacity building at local level, screening and treating eye ailments, developing referral-linkages and providing rehabilitation services.

The project started delivering services through a trained team of an ophthalmologist, ophthalmic assistants, outreach field workers, itinerant teachers, a project coordinator, supervisors and community workers. After the initial difficulties, the project was able to make significant inroads in the area with the beneficiary community becoming an integral part of the implementation and monitoring processes. In a region where eye care had never been organized in a planned way and no formal eye care services/systems existed, the process of bringing the communities together was slow. The project team organized a number

1 Spread across 12 districts of Rajasthan, the Thar Desert continues further in the states of Gujarat, Punjab and Haryana in India and to Sindh in Pakistan.

2 Health for the millions, Voluntary Health Association of India, June 2004.

3 National Programme for Control of Blindness, Present status of blindness and visual impairment in India, 1993, Ophthalmology Section, MOHFW, GoI.

4 Personal Communication, Indian Council of Medical Research.

of discussion meetings, exchange of ideas, workshops and a participatory research appraisal to generate awareness. Efforts were made to bring the community based groups/volunteers together including Village Development Committees (VDC), Village Health Workers (VHWs) and Self Help Groups (SHGs) and they are now playing important roles in continuation of the efforts. Formation of these groups had been facilitated by GRAVIS in the past for implementation of its developmental projects. Later, Village Eye Care Committees (VECC) were formed in a number of villages of Sankra block. A large number of VECC members are the beneficiaries of the programme themselves from surgical or curative services. VECCs started playing an effective role in guiding the patients

to reach hospital for treatment. These committees also took up the responsibility of organizing eye care activities in their respective villages such as screening camps, awareness camps, street plays and community level trainings. Till date, 40 VECCs have been formed and have 408 members. In order to make the services accessible to larger groups of people, vision centers have been set up in remote areas. After continuous efforts and some delays, the Government support also started to come in the form of reimbursement of surgeries, IEC materials and rehabilitation support and services. GRAVIS hopes to continue its education of irreversibly blind children of the region with Government support.

The implementation methodology of GRAVIS in delivering community eye care in the Thar Desert has focused on four major strands – community participation and networking, capacity building at the community level, blending traditional wisdom with modern and appropriate technology and ensuring sustainability and self-reliance of initiatives.

Networking between the community based groups, local Government authorities and a number of national and international NGOs has provided momentum to the initiative and will contribute to sustainability. Till date, GRAVIS efforts on awareness generation and education in eye-care have benefited over 250,000 people and over 6,700 patients have received surgical support through its hospital. GRAVIS has also emphasized the development of cross-sectoral partnerships. In its new CEH project in another region of the Thar Desert, it has developed partnerships with Sight Savers International, Catholic Relief Services and local Government, through which issues focusing on provision of eye-care, women's empowerment and livelihood generation are being integrated – an effort towards holistic development of these rural communities. In addition, GRAVIS plans to work on the concept of community health funds for the Thar Desert region, through provision of eye care will be covered leading towards sustainability and self-reliance.

At an organizational level, the programme has been a learning process for GRAVIS. Although the organization has been working in the region for a long time and has been implementing a comprehensive healthcare programme for a number of years, eye care was a new sphere of activity for GRAVIS. A number of training and orientation programmes helped enhance understanding of and strengthening capacity in community eye care. With these enhanced skills, GRAVIS later took up the responsibility of orienting a number of NGOs entering the field of eye care. Looking ahead, the organization will emphasize the integration of eye care with overall development oriented interventions, focused capacity building and strengthening the outreach services component. It also aims to develop a small but comprehensive resource center to cater to the much needed training and capacity building requirements of the region.

In integrating eye-care with the developmental process, continuous capacity building at the community level and networking of concerned stakeholders are the key elements in effective and sustainable implementation of community-based eye-care programmes in a region like the Thar Desert. This experience is a very good example for eye care service delivery in a difficult and underserved area and serves to form a model for advocacy to deliver services in other difficult areas.

GRAVIS' community eye-care activities till date: a statistical overview			
S. No.	Activities	Number of events	Number of beneficiaries
1.	Patients treated	–	15,864
2.	Number of eye surgeries conducted	–	6,782
3.	Screening camps	230	19,716
4.	Awareness camps	1,408	40,228
5.	School screening	72	6,297
6.	Education to visually impaired children	–	30
7.	Rehabilitation services to visually impaired people	–	284
8.	Provision of spectacles	–	1,820
9.	Trainings for village health workers on eye care	11	540
10.	Trainings for school-teachers on eye care	11	365
11.	Doses of Vitamin A and MMR to children	–	12,409
12.	Trainings for Community Eye Health (CEH) Workers	3	16



Women beneficiaries in an outreach camp

# An Innovative Rural Survey: The Experience of SEWA

SEWA Rural Team: Lata Desai, Pankaj Shah, Uday Gajiwala, and Rajesh Shah

## Introduction

SEWA Rural, a general development organisation established in 1980 in Gujarat, is engaged in eye care activities in Bharuch and adjoining districts in the southern part of the state. Other activities of the organisation include running a 100-bedded general hospital, a community health programme, training centre, the Vivekananda Technical Training centre and a women's programme. Various innovative approaches have been tried in the area including Comprehensive eye care and Community Eye Health programmes. Bharuch district has a population of 14 lacs and the annual performance of the district is 10,000 cataract surgeries<sup>1</sup> (SEWA rural performs > 5000 cataracts/year including 100 pediatric surgeries).

We approached the Govt. of India with a request to support a survey to estimate the level of blindness in the area. The Govt. immediately agreed with an addition of a component on childhood blindness. This was the first time two surveys would be combined, probably reducing cost and increasing efficiency in the use of human resources also.

The study team was trained at the Regional Institute of Ophthalmology, Ahmedabad in the presence of national survey monitoring agency officials. The actual field work was done between April and June 2005.

This survey provided an opportunity to piggyback childhood blindness on adult cataract blindness as we wanted to generate evidence that was consistent with national figures. Against the national average of 7% refractive errors among school children, we had been finding only 2% refractive errors, and when we analysed the data separately from primary and secondary schools the results were more interesting. Refractive errors were much less common in primary school children than in secondary school children. We hypothesized the differences were due to rural-urban differences on the one hand and age group –on the other. We were trying to find more references in the literature and that was when this survey was suggested by the Government of India.

Our experience in the CEH programme in the Dediapada block showed that children do not use spectacles when they are given the same frames even if it is given free of cost. However, those with a high degree of refractive error were found to be more likely to use glasses probably because of the level of discomfort. We subsequently decided to provide a choice of frames to children even when the glasses are provided free of cost. At the same time, the suggestion from ICEH

is to prescribe only when the myopia is > 1D, hypermetropia > 2D and astigmatism > 0.75D, labeled as “significant refractive error”.

In work done by National Society for Prevention of Blindness, Godhara<sup>2</sup>, prevalence of refractive error among children of Fifth Standard was 2.5% whereas among children in the Ninth Standard it was 9.5%.

The Drishti Project, carried out by Nagari Hospital<sup>3</sup>, Ahmedabad reported the age of onset of refractive errors among kids in Ahmedabad city as 81% among children between the ages of 9 to 13, 10% among kids <9 years of age and 9% among those >13 years of age.

## Findings

The results of the survey are summarized in the two tables.

- A total of 5400 children were examined in the survey.
- The results indicate that presenting VA with available correction is taken as the criterion, the number of blind children with a cut off of 6/60 are 19 but if we take uncorrected PVA, the number is 43.
- In the study conducted at AIIMS, the age group covered was 5 to 15; 46 of the 5950 children screened had a presenting visual acuity <6/60. Thirteen had the baseline visual acuity < 6/60 and 3 had a best corrected visual acuity less than 6/60. So the findings are quite similar<sup>4</sup>.
- Prevalence of high degrees of refractive error in the age group below 9 years is very low.
- Prevalence of refractive error among rural children<sup>5</sup> is also substantially lower than urban children; 56% of the total refractive errors are among rural kids who comprise 80% of the total registered kids.
- The prevalence of high degrees of refractive errors, whether myopia or hypermetropia is also very low – 59 children out of 5400, which is 1.1% of the total kids.



Refraction of a child being carried out during the Survey

## RURAL VS. URBAN DIFFERENCES in the Bharuch Survey

	RURAL			URBAN			TOTAL
	5-9 Yrs.	10-12 Yrs.	13-15 Yrs.	5-9 Yrs.	10-12 Yrs.	13-15 Yrs.	
<b>Hypermetropia</b>							
<1D	10	6	3	8	5	6	38
1.25 - 3 D	1	2	1	1	0	4	9
3.25 - 7 D	3	2	1	0	0	1	7
>7 D	0	1	0	0	1	0	2
<b>TOTAL</b>	<b>14</b>	<b>11</b>	<b>5</b>	<b>9</b>	<b>6</b>	<b>11</b>	<b>56</b>
<b>Myopia</b>							
<1D	41	46	32	14	21	33	187
1.25 - 3 D	10	8	14	9	9	23	73
3.25 - 7 D	0	4	8	1	1	9	23
>7 D	0	3	2	3	4	2	14
<b>TOTAL</b>	<b>51</b>	<b>61</b>	<b>56</b>	<b>27</b>	<b>35</b>	<b>67</b>	<b>297</b>
<b>GRAND TOTAL</b>	<b>65</b>	<b>72</b>	<b>61</b>	<b>36</b>	<b>41</b>	<b>78</b>	<b>353</b>

- The prevalence of hypermetropia goes down with increasing age and that of myopia increases; this is a natural phenomenon that should be expected.
- The prevalence of refractive errors is more among males (54.7%) – this could be due to higher literacy rate among men.
- Of the total 331 children with refractive errors, 65 are using spectacles – which is 19.6%. Almost one out of five children having refractive errors was using glasses at the time of examination.
- Of the 59 children with a high degree of refractive errors, 25 are wearing glasses at the time of examination, which is 42.4% of the total number with high refractive errors. That means, high degrees of refractive errors prompt the children and parents to have the error corrected and use the necessary glasses because of the amount of disability caused by it.
- Interestingly, the correction used overall is much higher among urban children. If all types of refractive errors are considered, the percentage of children using glasses among those with a high degree of refractive errors is not much different in rural and urban areas.

This suggests that high degrees of errors produce so much disability that even rural children and parents get it corrected to an equal extent.

- The average age of prescription of glasses in children is >9 years; this suggests that we need to change the approach of the national programme. We can thus stop screening primary school children.
- At the national conference it was suggested that we need to reconsider the need to screen rural children and school dropouts.
- Similarly it was suggested that the visual acuity cut off of 6/12 should be used instead of 6/9 for school eye screening to ensure that only significant refractive errors are detected, since only those children are likely to use spectacles.

### Conclusions

The major findings of the survey can be summarized as below.

- The report calls for a change in the policy of school screening programmes to screen secondary school children (10 to 14 years) and avoid screening primary school children (5 to 9 years). This has also been suggested by an expert from ICEH, London.

- Since children with low degrees of refractive errors are less likely to use the correction and it is not a blinding condition, we can change the visual acuity cut off from 6/9 to 6/18; a study on this aspect was proposed at the Refractive Error workshop conducted under the banner of the VISION 2020 programme in New Delhi in 2005.
- Though not analysed separately, it was observed that refractive errors are less common among school dropouts, so we can avoid screening non school going children. The figures from the developed countries also suggest the same - by the time the children reach their teens, almost 85% of them develop refractive errors.
- Children should be given a choice of designs of frames that they find attractive even if the glasses are provided free but the options should be limited and controlled keeping in view the visual needs.

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### VISUAL IMPAIRMENT

VISUAL ACUITY	BILATERAL			UNILATERAL		
	PVA without using glasses	PVA with using glasses	BCVA	PVA without using glasses	PVA with using glasses	BCVA
<= 3/ 60	15	8	6	11	11	6
<= 6/60	43	19	6	17	17	7
<= 6/18	123	71	13	32	32	16

## Management Training and Systems Development for Hospital Administrators/Managers (April 14 - May 24, 2008)

Lions Aravind Institute of Community Ophthalmology (LAICO) - A WHO Collaborating centre, part of Aravind Eye Care System is offering the 16th six weeks Programme on "Management Training and Systems Development for Hospital Administrators/Managers" beginning from April 14 - May 24, 2008.

This course is highly recommended for those who would like to increase the patient load of their hospital, improve the financial viability as well as quality of patient care.

The entire course is sub-divided into various structured modules. The first 4 weeks of the course the participants will have the opportunity to undergo lectures on various topics from various experts at LAICO-AECS & few other Guest Faculties. Besides lectures the teaching methodology also incorporates Group exercises, Case study discussions, Brainstorming, Role Plays, Case Analysis, and Experience sharing sessions covering a wide range of topics in healthcare administration.

In the last two weeks the participants will be posted in two different functional departments for the practical

training of their choice to get hands on experience & also to deliver a short term project. The Participants are expected to prepare a set of strategies for all the modules out of their learning & interactions with the faculties which is applicable to their situation which is the key factor for the success of the course.

For more details:

<http://www.aravind.org/education/hospadmin.asp>

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