

# Vision Rehabilitation of Visually Impaired: An Eye care practitioner perspective In India.

Md Kausar Jamal<sup>1</sup>, M.Optom; Prof. Monica Chaudhry<sup>2</sup>, M.Optom, Zeeshan Akhtar<sup>3</sup>, M.Phil (Optometry).

## Abstract

**Purpose:** To assess the Vision Rehabilitation of Visually Impaired: An Eye care practitioner perspective In India.

**Background:** We can see the world with help of our eyesight. Reduction of visual perception occurs due to incurable daily life activities. The prevalence of visual impairment is the burden of developing countries. It has been estimates that in India 20.5% blindness, 22.2% low vision and 21.9% visually impaired.<sup>27</sup> Poor low vision service, lack of awareness among practitioner and public are the major barriers in India.

**Materials and Methods:** This prospective, survey and questionnaire based study were conducted among the entire eye care practitioner with the help of a validated questionnaire. These questionnaires were through speed post, telephonic and face-to-face interview amongst Ophthalmologists and Optometrists in India.

**Results:** In this study, the mean age of the practitioners was  $27.25 \pm 5.356$  and male and female participants were 156 (54%) and 134 (44%), respectively. Among all (n=290) participants, 27 were Ophthalmologist and 263 were Optometrist from 19 states of India. Among all participants, most of them were working at Private Hospital (69.3%), Optical Outlet (15.9%), Individual Practice (6.6%), Government Hospital (5.9%), Lecturer in Optometry (1.4%) and Assistant Professor (1.0%). For visual rehabilitation, 62.4% participants claimed to be providing both spectacle correction and low vision devices. 13.4 % said they only provide spectacle correction, 12.4% provide only low vision devices and remaining 10.4% referred to other centres for visual rehabilitation. Magnifiers (hand/stand/spectacle) 77%, non-optical devices (15%), electronic devices (3%), other devices (4%) and telescope (1%), were the most prescribed devices in low vision in practice. In this study, Retinitis pigmentosa (36.2%), Age-related macular degeneration (16.6%), Diabetic retinopathy (15.9%) and Glaucoma (10.0%), were reported to be the major category of visual impairment seen in clinics.

**Conclusion:** The eye care practices in India barely focus on rehabilitation and prescription of low vision devices for the visually impaired.

**Keywords:** Knowledge, awareness, low vision, rehabilitation, barriers, concession facilities, Ophthalmologist and Optometrist.

**Declaration:** The Author has no financial or proprietary interest in any material or method mentioned.

## Introduction

It is estimated that India has 40% of the 245 million visually impaired patients yet the availability of low vision services and access to visual rehabilitation centres in India is found to be very poor. There is varied distribution of eye care services for visually impaired and a vast difference in rehabilitation services among the rural and the urban areas. The distribution of established low vision centres can be counted on fingers and is estimated to be 24. The eye care centres would provide different levels of the vision enhancement options most of them would refer to blind schools or organizations for rehabilitation.<sup>1,2</sup>

Vision Rehabilitation of visually impaired includes enhancing the visual ability of the affected person by providing assistance with low vision devices and rehabilitation services. It involves making the most of a person's residual vision, and try to overcome his or her visual disabilities, mental stress and issues that are most problematic for their daily life activities. Vision rehabilitation usually helps to enhance functional vision to overcome reading-writing and vocational related performance problem, mobility problems, identify people and objects, recognizing details of signs and patterns, access to information, emotional well-being and overall quality of life.<sup>23</sup>

Khan SA et al<sup>1</sup> in 2005 reported that lack of training / knowledge (82.3%), non-availability of low vision devices (72.2%), lack of awareness (74.7%) and poor motivation (54.4%), were the major barriers to providing low vision services amongst ophthalmologists. In another study by Rakhi et al<sup>3</sup>, poor referral system was found to be major barrier in accessing low vision services. It found that psychological factors, expensive low vision services, poor cosmetic appearance of devices, non availability of vision rehabilitation centres and socio-cultural factors affect the utilization of low vision services. Marinoff et al<sup>5</sup> has also reported lack of referral as major barrier in providing vision rehabilitation services.

After almost 15 years of pilot study done by Sarfaraz et al<sup>1</sup> in 200 the study aims to understand the change in perspective of eye care practitioners both optometrists and ophthalmologists towards vision rehabilitation of visually impaired people in India. The number of eye care practitioners and their updated knowledge about low vision and vision rehabilitation services is expected to have advanced over these years, yet we do not see proportional increase in low vision experts practicing in this field. To understand this we conducted a survey amongst the eye care practitioners.

## Methodology

A prospective questionnaire based survey conducted which was distributed through speed post, telephonic and face-to-face interview amongst Ophthalmologists and Optometrists in India.

The recorded responses were entered in the excel sheet and the data was transferred and analysed using SPSS 20.0.

## Results

Two hundred and ninety participants (27 ophthalmologists and 263 optometrists) across the country actively responded to the questionnaire. The mean age of the participants was  $27.25 \pm 5.35$  years, out of which 54% were males and 44% were females. 69.3% of total participants were working in private hospitals, 6.9% were in government hospitals, 15.9 % were in optical industry and 8% were private practitioners.

Retinitis pigmentosa (36.2%) was reported to be the major category of visual impairment seen in clinics, followed by age related macular degeneration (16.6%), diabetic retinopathy (15.9%), glaucoma (10.0%), albinism (6.6%), nystagmus (4.8%), optic atrophy (2.8%) and remaining diseases would be around 7.2%.

For visual rehabilitation, 62.4% participants claimed to be providing both spectacle correction and low vision devices. 13.4 % said they only provide spectacle correction, 12.4% provide only low vision devices and remaining 10.4% referred to other centres for visual rehabilitation.

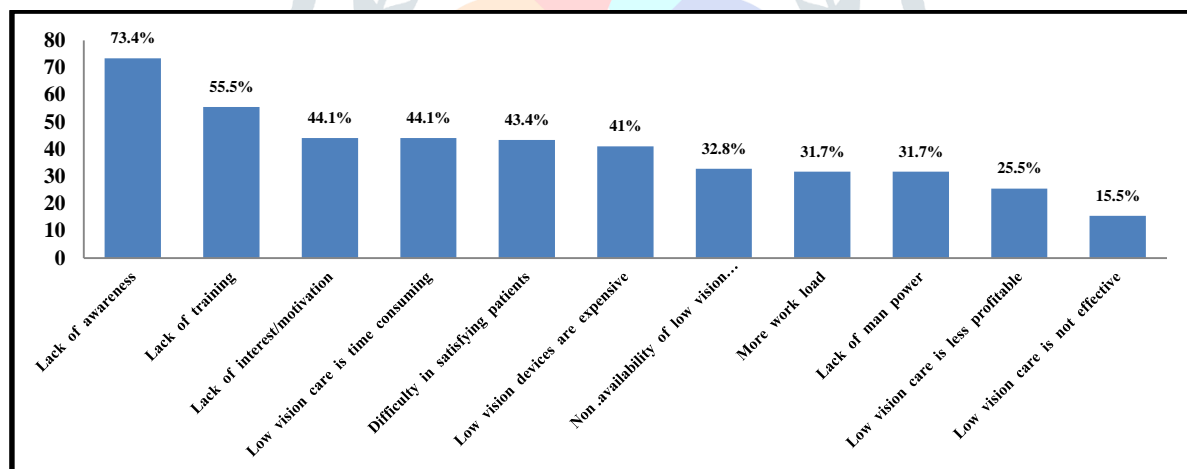
Out of the low vision devices prescribed, magnifiers (77%) were found to be the most common followed by non-optical devices (15%) and only (3%) would be prescribing electronic devices and telescopes as optical device for distance was also prescribed by only 1% of the participants.

94.8 % of the participants were aware of the WHO definition of low vision, yet 59.3% of participants use only visual acuity as criteria to refer patients to visual rehabilitation centre. The table below represents the visual acuity cut off consideration response of the participants.

**Table.1 Criteria of cut off visual acuity to refer the patient as visually impaired**

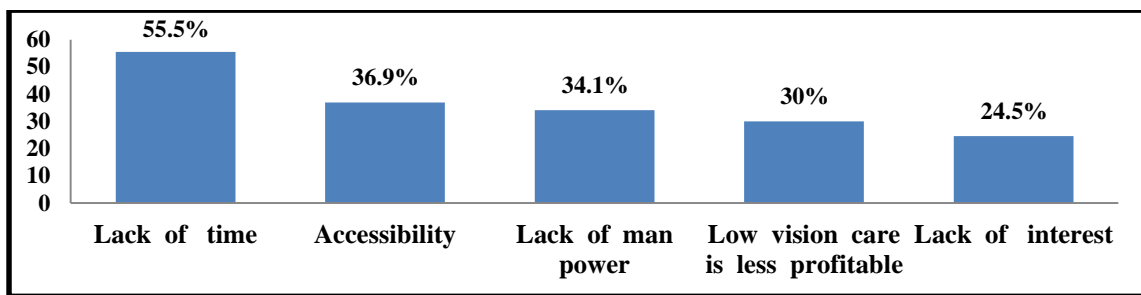
Criteria	1/60	3/60	6/60	6/36	6/18	Not Sure	Total
Optometrist	6	22	38	23	164	10	263
Ophthalmologist	2	8	6	1	8	2	27
Total	8	30	44	24	172	12	290

**Figure 1.Barriers in providing low vision care among practitioners.**

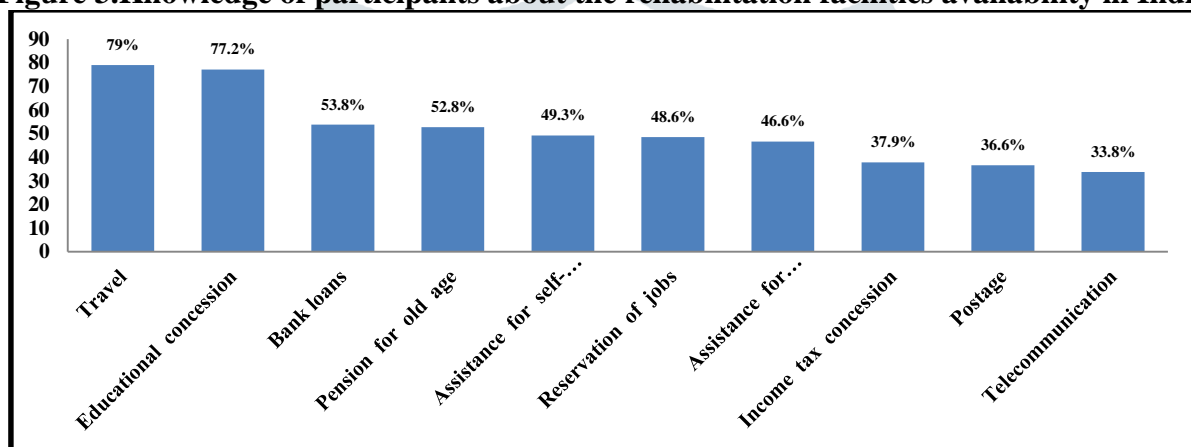


**Value on each bar represents the yes response of participants**

Figure no 1 helps presents the reasons for lesser number of low vision practices. Poor knowledge (73.4%) and training (55.5%) were found to be the major barrier followed by poor interest in practising low vision, increased chair time and unable to satisfy patient were other reasons for poor low vision services. Poor availability of devices and less profit were also mentioned as barriers.

**Figure 2. Participants perspective about low vision training programs**

As poor training was mentioned as one of the major barrier to low vision services, we also looked in to the participants' perspective about low vision training programs. Figure 2 shows the details of barrier in attending low vision training programs. Lack of time and poor accessibility to training programs were listed as major barriers. They also reported that poor interest in practising low vision and less profit were also documented as barriers. Interestingly, participants with less than three years of experience showed higher interest and keenness to participate in training programs.

**Figure 3. Knowledge of participants about the rehabilitation facilities availability in India**

We also looked into the understanding and knowledge of participants about the services and support provided by government to visually challenge people. Majority of participants were aware of travel (79%) and educational concession (77.2%) provided by government. Nearly half of the respondents claim to have a fairly good knowledge about the government concessions and support provided to visually challenged population. Figure 3 shows the details of participant's response to the related questions.

## Discussion

The study has shown mixed results of vision rehabilitation services for the visually impaired patient in the country. The very fact that out of 1405 only 290 Eye care practitioners (ECP's) reverted indicates the status of involvement in the vision rehabilitation or low vision care in India. Of the responses received almost one third of the respondents had chosen not sure as their choice in reply. This is interesting and leads us to think that the knowledge is very poor.

Practitioners with less than three years of practice had relatively better knowledge and awareness.

To cover the ophthalmologists for the survey, the investigator approached them for interview in the major educational meetings and approached as many possible personally to volunteer to respond. However the number of ophthalmologists who volunteered to participate in the study was very less because almost 7 out of 10 approached refused to reply. 57 forms filled by ophthalmologists were rejected because they refused to complete the survey as they were not comfortable with this subject. Refusal even on face to face interview itself hints a poor awareness status amongst ophthalmologists in our country.

Our study reported "Age-Related Macular Degeneration (16.6%)", "Diabetic Retinopathy (15.9%)" and "Glaucoma (10%)", as the most common causes of low vision in India which was comparable to Sanitha Sathyan et al<sup>6</sup> study however Retinitis Pigmentosa (36.2%)" was stated as the major cause to visual impairment seen in their eye care practices. This large number of Retinitis Pigmentosa (RP) numbers report indicates that the RP patients had disability issues which were not well managed by the eye care services; hence these patients may be frequent visitors with expectation of some possible advancement in their management.

Practitioners feel that 50% of the patients would not accept the low vision device due to cosmetic reasons or would not be convinced about the utilization of the device in their routine. They approximate that 50% of their patients find them to be expensive. The local made devices are assumingly low cost yet this perception of patients response hints that visual impaired patients seen might have very poor economic condition or the another other reason could be that it is less convincing recommendation by the practitioner which makes them feel the device is not worth the money spent.

Similar to Adam R et<sup>7</sup> in our study also most of the practitioner would refer patients to rehabilitation centre or would send to another hospital for low vision assessment only when the patient shows concern on inability to do tasks. 55 % of eye care practitioners who practice low vision would consider vision rehabilitation on their own. The representation of these figures could be misleading as the meaning of the term rehabilitation as understood by them was “training to use low vision devices (81.4%)”, “counselling (74.8%)” “mobility training (70%)” and “adaptive training for job (62.1%)”.

Unfortunately all this depict that neither there is enough awareness about vision rehabilitation centre nor many ECP's are interested in offering low vision service to the visually disabled. Most of the patients are left with low vision without any vision rehabilitation or enhancement. Anecdotal experience is also such that eye care practitioner has not thought seriously on low vision services for the patients.

Interestingly the questionnaire itself triggered awareness amongst some practitioners during face to face interaction. They were keen to discuss and know more about the low vision and rehabilitation centres in their region. The attitude was positive but seems to be directionless and on least priority to help enhance the vision of low vision patients.

The study summarises some key aspects in visual impaired management which are as follows. The Management criteria for the patient are mainly focused on prescribing optical devices and none of them would look over the patients need and other psychological aspects.

Emphasis should be on increasing level of knowledge amongst practitioners in management and referral criteria of a visual impaired patient. Not only should this process of referral be well defined. Contact between different rehabilitation organization and practitioner would be very useful information for these patients and their family provided by such centres. Patient counselling should be more specific and based on physical, social and psychological perspective of low vision patients. Training and continuing medical education meetings can be way forward but almost a quarter of them would not be interested in such and almost one third of them feel it is not a profitable business option. 36.9% responded that access to such trainings is an issue as they are majorly focussed in major cities. This means that distribution of these trainings has to be local and regional as far as possible.

Practitioner prescriptions have to shift from just prescribing a magnifier as optical device to other useful need based device selection. Non-optical and electro-optical devices were not recommended because most of the practices would not have trials of such devices to demonstrate. Availability of low vision devices is poor in India due to this limited demand and thus the industry does not find the investment in low vision devices as a profitable option. The increasing prescriptions and demand will automatically increase the resources and availability in the market.

Training and improvement of the low vision practice would be required for almost levels of eye care practice. Low vision curriculum should be extensively expanded. Ophthalmology's strong recommendation and co management with optometrist can satisfy and make life of many visual impaired vision patients independent. The younger practitioner is very optimistic and better educated and they can be targeted and supported to build many rehabilitation centres or clinics across the nation.

## Conclusion

The eye care practices in India barely focus on rehabilitation and prescription of low vision devices for the visually impaired. Lack of initiative, training, knowledge and non availability of devices are major barriers which can be addressed easily with proper strategy and advocacy.

## References

1. Khan SA, Shamanna B, Nuthethi R. Perceived barriers to the provision of low vision services among ophthalmologists in India. *Indian J Ophthalmol*. 2005;53:69–75.
2. Pollard TL, Simpson JA, Lamoureux EL, Keeffe JE. Barriers to accessing low vision services. *Ophthalmic Physiol Opt*. 2003;23:321–7.



3. Rakhi Dandona, Lalit Dandona, Thomas J Naduvilath, Catherine A McCarty, Gullapalli N Rao. Utilisation of eyecare services in an urban population in southern India: the Andhra Pradesh eye disease study. *Br J Ophthalmol* 2000;84:22–27.
4. Olga Overbury, Walter Wittich. Barriers to Low Vision Rehabilitation: The Montreal Barriers Study. *IOVS*, November 2011, Vol. 52, No. 12.
5. Marinoff R. Referral patterns in low vision: A survey of mid-south tri-state eye care providers. *J Behav Optom.* 2012;23:9–15.
6. Sathyan S, Davis J, Antony RC, Mathew S, Jyothi R. Demographic and clinical profile patients presenting at the low vision clinic of a tertiary eye care facility in Kerala. *Kerala J Ophthalmol* 2016;28:48-52.
7. Adam R, Pickering D. Where are all the clients? Barriers to referral for low vision rehabilitation. *Vis Impair Res.* 2007;9:45–50.
8. [http://www.rehabcouncil.nic.in/writereaddata/Appendices\\_5.pdf](http://www.rehabcouncil.nic.in/writereaddata/Appendices_5.pdf)
9. Lamoureux EL, Pallant JF, Pesudovs K, Rees G, Hassell JB, Keeffe JE. The effectiveness of low-vision rehabilitation on participation in daily living and quality of life. *Invest Ophthalmol Vis Sci.* 2007;48:1476–1482. <http://iovs.arvojournals.org/article.aspx?articleid=2125048>
10. Albert I Matti, Konrad Pesudovs, Andrew Daly, Margaret Brown, Celia S Chen. Access to low-vision rehabilitation services: barriers and enablers. *Clinical and Experimental Optometry* 94.2 March 2011.
11. Srinivas Marmamula, Rohit C Khanna, Konegari Shekhar, Gullapalli N Rao. A population-based cross-sectional study of barriers to uptake of eye care services in South India: the Rapid Assessment of Visual Impairment (RAVI) project. *BMJ Open* 2014;4:e005125. doi:10.1136/bmjopen-2014-005125.
12. Gothwal VK, Sumalini R, Bharani S. Assessing the effectiveness of low vision rehabilitation in children: an observational study. *Invest Ophthalmol Vis Sci.* 2015;56:3355– 3360. DOI:10.1167/iovs.14-15760.
13. Nikhil Pal, Jeewan S Titiyal, Radhika Tandon, Rasik B Vajpayee, Sanjeev Gupta, GVS Murthy. Need for optical and low vision services for children in schools for the blind in North India. *Indian J Ophthalmol.* 2006 Sep;54(3):189-93.
14. O. Ike Okoye, A. E. Aghaji, R. E. Umeh, D. F. E. Nwagbo & A. Chuku. Barriers to the Provision of Clinical Low-Vision Services Among Ophthalmologists in Nigeria. Pages 11-17 | Accepted 28 Nov 2006, Published online: 13 Jul 2009. <http://www.tandfonline.com/doi/abs/10.1080/13882350701198702>
15. Khan SA. A retrospective study of low-vision cases in an Indian tertiary eye-care hospital. *Indian J Ophthalmol.* 2000;48:201–7.
16. Shah SP, Minto H, Jadoon MZ, Bourne RR, Dineen B, Gilbert CE, et al. Prevalence and causes of functional low vision and implications for services: The Pakistan national blindness and visual impairment survey. *Invest Ophthalmol Vis Sci.* 2008;49:887–93.
17. Mohamed IA, Binnawi KH. Causes of low vision and visual outcome after using low vision devices in Sudanese children. *Sudanese J Ophthalmol.* 2009;1:37–40.
18. Keeffe JE, Lovie-Kitchin JE, Taylor HR. Referral to low vision services by ophthalmologists. *Aust N Z J Ophthalmol.* 1996;24:207–14.
19. Ilango K, Krishna RP. Comprehensive study on perceived barriers to low vision services. *Indian J Ophthalmol.* 2005;53:209.
20. Hinds A, Sinclair A, Park J, Suttie A, Paterson H, Macdonald M. Impact of an interdisciplinary low vision service on the quality of life of low vision patients. *Br J Ophthalmol.* 2003;87:1391–6.
21. Markowitz SN. Principles of modern low vision rehabilitation. *Can J Ophthalmol.* 2006;41:289–312.
22. Chiang PP, O'Connor PM, Le Mesurier RT, Keeffe JE. A global survey of low vision service provision. *Ophthalmic Epidemiol.*
23. Dandona R, Dandona L, Srinivas M, Giridhar P, Nutheti R, Rao GN. Planning low vision services in India : a population-based perspective. *Ophthalmology.* 2002 Oct;109(10):1871-8.
24. Gresset J, Baumgarten M. Prevalence of visual impairment and utilization of rehabilitation services in the visually impaired elderly population of Quebec. *Optom Vis Sci.* 2002; 79: 416-423.
25. Serge Resnikoff, Donatella Pascolini, Daniel Etya'ale, Ivo Kocur, Ramachandra Pararajasegaram, Gopal P. Pokharel, Silvio P. Mariotti. Global data on visual impairment in the year 2002. *Bulletin of the World Health Organization* | November 2004, 82 (11).

26. Pollard TL, Simpson JA, Lamoureux EL, Keeffe JE. Barriers to accessing low vision services. *Ophthalmic Physiol Opt.* 2003;23:321–7.
27. <http://www.who.int/blindness/GLOBALDATAFINALforweb.pdf?ua=1>
28. Abdullah Z. Alotaibi. The state of low vision services in Saudi Arabia. *CLIN. EXP. MED. LETT.* 2006; 47(4):215-218.
29. Samuel N. Markowitz. Principles of modern low vision rehabilitation. *Can J Ophthalmol* 2006;41:289–312.
30. <http://www.who.int/blindness/causes/priority/en/index4.html>
31. <http://www.bpaindia.org/pdf/VIB%20Chapter-I.pdf>

