

Clinico-Social Study of Low Vision Aid treatment and its benefits in improving quality of life among patients in Patna.

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Abstract:

Aim: The aim of this study was to determine whether visual acuity of low vision aid patients could be corrected using low vision aids and rehabilitation techniques and to understand to what extent this would lead to the quality of their daily living.

Methods: In Mahavir Netralaya Kankarbagh and Renu Eye Center Patna, 36 patients with low vision were examined, investigated and treated by the author in the period between Dec 2018 to April 2019, using a variety of new instruments and rehabilitation techniques. Details related to their visual acuity pre and post interventions were determined through in person interviews and clinical examination.

Results: There was improvement in visual acuity in 32 patients as well as improvement in quality of living where patients were able to undertake several household and profession related tasks and activities

Conclusion: Through this study, the author concludes that for low vision patients, following proper diagnosis, and treatment, proper rehabilitation tools and techniques are needed to bring improvement to the quality of life. (166 words)

keywords: low-vision; aid treatment; quality-of-life-improvement.

Introduction:

Low vision is the term used to describe significant visual impairment that can't be corrected fully with glasses, contact lenses, medication or eye surgery [1]. It includes: Loss of best-corrected visual acuity. (BVCA) to worse than 20/70 in the better eye. The terms "partial sight" or "partial blindness" or even "poor vision" were used to describe low vision [1]. However, a proper definition of low vision, related to visual acuity, will help the scientific community to understand low vision better. One accepted definition is "Low vision is a condition caused by eye disease, in which visual acuity is 20/70 or poorer in the better-seeing eye and cannot be corrected or improved with regular eyeglasses. (Scheiman, Scheiman, and Whittaker) [2] Currently, India has around 12 million blind people which makes India home to one-third of the world's blind population [3]. With the increasing life expectancy and thus increasing age related problems, the magnitude of visual impairment is expected to rise in coming years. With this emerging problem, it becomes important to find feasible and effective solutions to improve both visual acuity and quality of life of patients suffering low vision. While "best possible" correction is the first step towards this, "improving simple life-skills" through a rehabilitative process is also as important.

Materials and Methods:

In Mahavir Netralaya Kankarbagh and Renu Eye Center Patna, 36 patients with low vision were examined, investigated and treated by the author in the period between Dec 2018 to April 2019. Following a systematic screening process including a structured History taking, Clinical examination and relevant lab investigation, a more specific line of investigation for low-vision patients were undertaken. This included assessing visual acuity through Snellens chart for distance, near vision chart; assessing colour vision with Ishihara charts, examination of ocular movements and slit lamp examination. Newer instruments such as Mono-ocular and Binocular telescopes were used to assess distance vision. Likewise, for near vision- Hand held magnifiers, illuminated and non-illuminated, pocket magnifiers, dome magnifiers, half eye magnifiers, cutaways were all used. According to diagnosis and need, line of treatment



included giving different kinds of magnifiers for visual correction and improvement. Special rehabilitation techniques were undertaken; this included M training for the patients with peripheral vision loss, Notex to recognize currency using a variety of new instruments. Also detailed home based rehabilitation exercises and task were given to each patient which were customized according to their situation and needs.

Results:

The results of the study were classified according to Clinical and Social aspects. The clinical aspects were related to determining the medical condition related to the visual loss and quantifying the pre and post visual acuity. The social aspects were related to patient satisfaction and improvement in the quality of undertaking their daily tasks and overall quality of life.

Clinical classification as per medical condition were as follows: Retinitis Pigmentosa 3, Coloboma 1, Nystagmus 4, Staghart disease 6, Bilateral Corneal opacity 4, Diabetic retinopathy 4, Amblyopia 1, Complicated Psuedophakia-3, Advanced Glaucoma 3, High Myopia 3, and Heredo Macular Degeneration 4

Results and classification in terms of improvement in visual acuity were as follows: PL-PR to 6/60 - 8 ; Counting fingers to 6/60- 6 ; Counting fingers to 6/36- 3; Counting fingers to 6/18: 3; 6/60 to 6/36 -9; No improvement: 4

Results in terms of social aspects, daily tasks and improvement in quality of life included the patients improved ability for the following tasks: reading newspaper, doing home and office work, 1 child able to read black board and give exams, improvement in walking independently through M training, handling money, improvement in household and cooking chores, including cutting vegetables, identifying spices and condiments.

Of the 36 patients, 34 were satisfied with their improvement at the end of the rehabilitative process. 4 who were not satisfied had advanced glaucoma with near total cupping(n=2). The other two were having End stage diabetic retinopathy.

Discussion:

The findings of this study have a vital implication because the burden of VI is gradually increasing. Another important finding in our study was that none of the people had received any specialist support earlier. Pal *et al.*⁴ did a study on 703 children attending blind schools and ascertained the need for spectacles and LVDs in children with useful residual vision. They concluded that there is large potential for these “incurably blind children” to benefit by use of spectacles and LVDs and emphasized the need of visual rehabilitation in these children. Khan *et al.*⁵ analyzed the perceived barriers to provision of LVDs among ophthalmologists in India and concluded lack of training/knowledge, lack of awareness, and non-availability of LVDs as the major barriers. They emphasized the importance of increasing knowledge and awareness of ophthalmologists about the benefits of low vision rehabilitation.

The important finding in our study was that most of children in this study(n=10) were going to regular schools and the most

commonly reported difficulties were related to their studying/reading habits like copying from the blackboard, reading textbook at arm's length, and writing along a straight line. It was interesting to observe that a significant improvement also occurred in the same activities which were related to their academics, that is, there was a significant decrease in number of children who were unable to do their routine activities due to visual reasons. This we feel is a very important inference of the study since a timely implementation of vision rehabilitation could help in maximizing their academic output. Low vision interferes not only with their routine and academic activities but it has also been now well-established that low vision has psychological consequences as well thus making the children feel depressed, anxious, fearful, and confused, psychological problems that do not allow these children to be an integral part of the society and the educational system. Among adults(n=24), most reported a better quality of life. They were able to sign, count money and have functional vision enabling them to go about there day today activities. They also had fewer falls

Conclusion:

This study has helped the author to conclude that for low vision patients, a systematic approach to screening, diagnosis, and treatment is needed, but in addition, nuanced rehabilitation using tools, tasks and techniques both at the clinic and at home can help to bring improvement in the quality of life.

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