Original Article

Evaluation of change in quality of life using low vision aids at low vision clinic of Mayo Hospital Lahore

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Abstract

Objective: 1) Use specific indicators to assess the quality of life for those with low vision.
2) Use the same metrics to compare people's quality of life before and after utilising LVA (Low vision aids)
3) Assess the availability of low vision sevices in hospitals.
Study design: It was a Cross sectional study design.
Place and duration of study: The study was conducted in November & December 2017 at The low vision clinic of the eye department of Mayo Hospital, Lahore.
Material and Methods: A pre-research planning phase was conducted in which every aspect was examined prior to the commencement of the study. The research site, target audience, sample size, work plan, organisational concerns, survey proforma designs, dummy tables, sampling technique, research methodology, and pilot study were all included.
Results: 26% of patients report no issues without LVDS, while 74% of patients have difficulty crossing roads.Patients with LVDS report a 100% improvement in their ability to watch television those who had residual vision.
Conclusion: Low vision gadgets can assist the great majority of patients with low vision function at a higher level. Low vision specialists advise patients on how to manage their impaired eyesight generally and suggest suitable low vision solutions.

1. Introduction

Fonda founded the first low vision clinic in New York in 1948. Another clinic opened its doors in Denmark in 1953. Numerous military personnel suffered from service-related impairments following World War II.Low vision services were finally acknowledged as an important component of patient care in 1960.[1]
A permanent functional vision loss that is not treatable with medication, surgery, or glasses is referred to as low vision. Patients with low vision might suffer from a variety of illnesses, field abnormalities, and levels of vision loss. On the other hand, a generic definition of low vision is a bilateral decrease in visual acuity or visual field brought on by a disturbance of the visual system
One's capacity to carry out tasks related to everyday living, work, or pleasure is hampered by this reduced acuity or field.
The types and severity of visual impairments that patients are experiencing, as well as how they are adjusting to their vision loss, should all be included in a low vision evaluation.[2]

Magnitude of visually impaired

There are 180 million visually impaired people in the globe, 45 million of whom are blind. There are 9 million people who are blind, and 171 million people who have some residual eyesight. There are 36 million people who have vision from higher than PL 3/60. There are 103 million people who could benefit from treatment. There are 68 million residuals who are actual low vision patients. 135 million people have poor vision.There are 1.5 million blind children worldwide, with 1 million of those being in Asia.[3]

Low vision services a comprehensive strategy

Throughout the world, low vision services are provided by a wide range of academic fields and social structures,

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but they are all focused on helping patients make better use of their functional vision.[4]

Low Vision Devices

There were four types of low vision devices.

Optical Devices

1. Telescopes
2. Lenses for ashperic lenticular glasses.
3. A hand magnifier
4. A stand magnifier
5. Prism Fresnel
6. Spheres of prism
7. Magnifier with paper weight
8. Magnifier with bars
9. A portable magnifier [5]

Not optical Devices

To write and read (Typoscopes)
contrast in lighting, electronic closed-circuit television, braille scanning, and computer-based text zoom

Expanders for fields

Reflector system: prisms [6]

Non-optical assistance can significantly improve the patient's capacity to manage their diminished vision on a day-to-day basis. Many different distributors provide adaptive equipment, such as the following large-format printed materials Self-threading needles, dial markings, Audiobooks (books with spoken words). Clocks that talk and watches aid sufferers in vocally keeping time. In order to prevent patients from writing above or below the line when writing the date, amount, or signature, cheque signing and writing aids are stencils with openings cut out. Most phone services offer free phone information calls to patients who submit a certification of visual impairment.[7]

In contrast

Visual recognition is enhanced when contrast between images is increased. For instance of inadequate contrast is when milk is poured into a white cup and placed against a white tablecloth. The contrast can be enhanced by using a table cloth and/or cup of a different colour.[8]

REASONING

A comprehensive interdisciplinary low vision treatment includes not only medical care and the prescription of magnifying glasses, but also social and professional rehabilitation. Quantitative information regarding the effectiveness of rehabilitation and the caliber of the Low Vision clinic is provided by this study. In this study we determined the needs of the public and the degree to which we can assist a person with low eyesight in doing their job.

Also determine what low vision clinics offer and how we may enhance our offerings to maximize the benefits received by clients?
Assessing the effects of low-vision services and looking into patients' functional condition and quality of life at a low-vision clinic

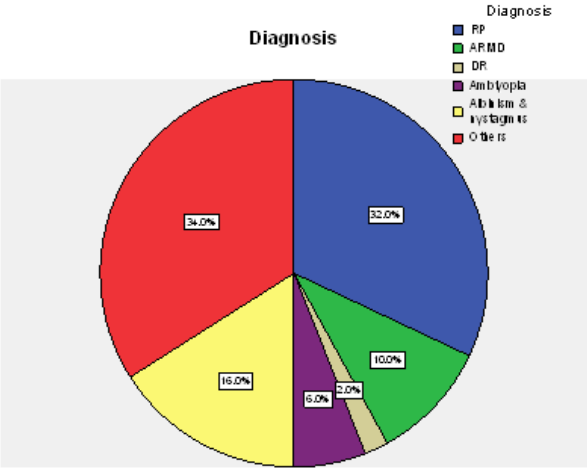
2. Materials & Methods

The study was conducted at The low vision clinic of the eye department of Mayo Hospital. The intended audience comprised fifty patients with low vision. Patients with vision impairments and receiving rehabilitation tools and magnifying glasses from the Low Vision clinic were included in this study. Every third person was involved in this study presenting at the Mayo Hospital's poor eyesight clinic. The data was collected using a questionnaires. Visual acuity was measured using a typical low vision Log MAR chart for each subject. Subjective refraction and retinoscopy were administered to those who were exhibiting improvement with pinhole. Each patient's details were entered into a structured questionnaire created especially for this use. Using Spss version 22.00 software, the data was obtained from this questionnaire. I used Microsoft Word to create graphs, tables and to analyse data.

3. Results

40 percent of the patients were categorised as belonging to the 11–20 age group, 26 percent to the 21–30 age group, 18% to the 1–10 age group, 10% to others, and 6% to the 31–40 age group.
Males made up 60% of the patients in this study, while

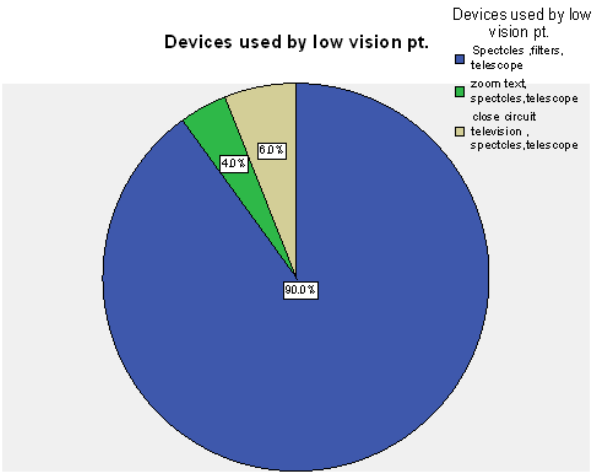
females made up 40%.
According to the data, 12% of patients were FA to MA, 76% of patients were Matric and under Matric, and 12% of patients lack literacy.
According to etiology 10% of patients experience ARMD, 2% amblyopia, 6% albinism and nystagmus, and 34% additional disorders. RP affected 16 percent of the patients.



If glasses are not worn, 82% of patients have impaired vision (1.00), 10% have 0.9, 6% have 0.8, and 2% have 0.7 scores.
Near visual acuity is 0.25/5 for 44% of patients, 0.25/3 for 24%, and 0.25/4 for 18% of patients.

Patients' near visual acuity is 0.25/5 for 44% of them, 0.25/3 for 24%, 0.25/4 for 18%, 0.25/2 for 12%, and 0.25/1 for 2% of them.
Ninety percent of patients utilize lenses, filters, and telescopes; six percent use close circuit television, lenses, and telescopes; and four percent use zoom text lenses and telescopes.

Patients employ hand held magnifiers (26%), bar magnifiers (4%), and stand magnifiers (70%).



82% of patients want the low vision clinic to provide them with great reading and writing, 12% want to see improvements in their everyday activities, and 6% have additional tasks.
After utilizing the low vision devices, 76% of patients' report feeling weary, while 24% report having no issues.
Patients' night vision is bad for 38% of them, intermediate for 36%, and fair for 26% of them.
80% of patients have difficulty seeing steps, while 20% report no problems at all with LVDS.
80% of patients have difficulty seeing steps, while 20% report no problems at all with LVDS.
In their current circumstances, 76% of patients feel unhappy, 20% are content, and 4% are averaging their lives without LVDS.

Just 2% of people feel unhappy about LVDS, 46% are average, and 52% report great improvements in their lives.
98% of patients gain from completing specific tasks, while 2% have average LVDS.
Without LVDS, every patient has difficulty writing and reading.
With LVDS, every patient reports 100% improvement in their writing and reading skills.

unhappy at your situation in life (without LVDS)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	BAD	38	76.0	76.0	76.0
	GOOD	10	20.0	20.0	96.0
	AVERAGE	2	4.0	4.0	100.0
	Total	50	100.0	100.0	

In the absence of LVDS, 80% of patients' experience problems (poor), 18% do activities mediocrely, and 2% perform activities well.

Based on the graph, 54% of patients carry out their daily living activities in a good manner, 44% in an excellent manner, and 2% in an average manner when using LVDS.

4. Discussion

The primary focus of any research on low eyesight and rehabilitation is typically found in tertiary institutions. It is crucial to provide low eyesight and rehabilitation programs that were appropriate. Each person with impaired eyesight needs to be taken into consideration individually, especially those who are elderly. The demands of older patients with limited eyesight will vary depending on their individual circumstances, including their overall health, motivation, attitude towards ageing and disability, where they are from, their economic situation, their reading levels, their family duties, and so forth. Even though losing one's ability to read is frequently regarded as the most disastrous effect of visual impairment in wealthy nations, it might not have much of an effect on an elderly person's quality of life in a small rural community in a low- or middle-income country.

Low vision care must be customised based on the patient's needs and unique to them, taking into account their age, occupation, and other variables. Even though the treatment of various disorders varies, the needs of the patient were prioritised; only what is most suitable for treating impaired vision in a particular setting is treated.

Low vision gadgets can assist the great majority of patients with low vision function at a higher level. Specialists in low vision advise patients on how to manage their impaired eyesight in general and suggest suitable low vision solutions. There were a lot of public and private organisations that support the blind.

Studies that are now available show that women were substantially more likely than men to be visually impaired at any age and in any part of the world. The distribution of visual impairment varies by age group. Despite making up only 19% of the global population, those 50 years of age and beyond account for more than 82% of all blind persons. With an estimated 1.4 million blind children under the age of 15, childhood blindness is still a serious issue because of the predicted number of years spent in blindness (blind years). [9]

This study was conducted in the Mayo Hospital's Eye Department, and fifty follow-up patients completed a questionnaire. They spend more than three months using smartphones. These gadgets help almost all of the patients in their social, financial, and lives. Various patients utilise distinct categories of equipment. 90% of patients utilise filters, telescopes, and eyeglasses; 6% use close circuit television, telescopes, and eyeglasses; 4% use zoom text lenses and telescopes. Patients employ stand magnifiers (70%), hand-held magnifiers (26%), and bar magnifiers (4%).

82% of patients anticipate exceptional reading and writing from the low vision clinic, 12% desire improvements in their day-to-day activities, and 6% have additional tasks.

With glasses, 88% of patients have an improvement in their vision from 1.0 to 0.5, and 12% have 0.4 vision.52% of people have no mobility issues, compared to 48% who have problems.Patients' night vision is bad for 38% of them, intermediate for 36%, and fair for 26% of them.

34% of patients do not experience glare problems without LVDS, but 66% of patients do. Patients relieved from glare by being advised to wear various types of filters in their glasses.LVDS helps 98% of patients see the street light.

When using LVDS to watch TV, all (100%) of the patients experience difficulty. When using LVDS to watch TV, patients report significant improvement. Two-thirds of patients report no problems at all when using LVDS, whereas 74% have difficulty crossing roads.Two-fourths of patients report no improvement with LVDS, while 76% indicate improvement when

crossing the street.

Without LVDS, all patients (100%) struggle with reading and writing.Every patient using LVDS reports a increase in their ability to read and write.
Eighty percent of patients' experience difficulties without LVDS, eighteen percent perform mediocrely, and two percent perform well. The results show that 54% of patients with LVDS carry out their daily life tasks well, 44% in an outstanding manner, and 2% in a mediocre manner.
76% of patients say they feel fatigued after using the low vision devices, whereas 24% say they have no issues.

190 suitable low-vision patients were studied by Saito Takashi and Imahashi Kumiko at the Research Institute of National Rehabilitation Centre for Persons with Disabilities in Japan.[10]

The patients' mean age was 72.5 (range 51–94), and 57% of them were female. Age-related macular degeneration (35%) was the most common cause of poor vision, followed by diabetic retinopathy (16%) and glaucoma (16%). Retinal detachment (3%), optic neuropathy (5%), and chronic uveitis (2%) were less common aetiologies.
In this study, 60% of the patients were male and 40% were female. The data shows that 76% of patients are Matric and under Matric, 12% are FA to MA, and 12% are illiterate.
10% of patients suffer from ARMD, 2% from amblyopia, 6% from nystagmus and albinism, and 34% from other conditions. Of the individuals receiving care, 16% had RP.

Research led by Karima S. Khimani and colleagues came to a conclusion Ten studies looked at financial status as a barrier to using LVR services; eight found a correlation between less affluent economic position and either no use of LVR services or minimal use of them, while three found none at all. [11]

According to a 2018 population-based study by CheeFoong Chong in New Zealand, the prevalence rates of blindness in children and visually impaired individuals were 0.05% and 0.06%, respectively. The three main causes of blindness were optic nerve hypoplasia (9.0%), optic nerve atrophy (16.5%), and cortical visual impairment (31.5%). Retinopathy of prematurity (18.2%), non-accidental injury (10.3%), and newborn trauma/asphyxia (31.5%) were the most preventable causes of blindness.[12]

Conclusion:

Low vision gadgets can assist the great majority of patients with low vision function at a higher level. Low vision specialists advise patients on how to manage their impaired eyesight generally and suggest suitable low vision solutions.

Recommendations:

Since these patients are informed beforehand that there is no way to improve their eyesight, measuring visual acuity involves more than just clinical low vision assessment—it also involves psychological assessment.Some individuals refuse to be examined because they are unable to see due to the extreme depression.Thus, we must adopt an optimistic outlook. In theory, people with low vision can still use their vision if they so want. They usually don't need to learn Braille or use white canes if they have access to the right low vision aids and training (though some people with low vision may find these useful as an extra or supplemental source of support). Although many of these patients may be categorised as blind, they are not strictly

Functional vision exam - an exam by a low vision specialist that determines the extent of a person's remaining sight. Presently, fewer than 5% of all eye doctors specialize in low vision.

Independent living skills - training in adaptive techniques for cooking, grooming, labeling and money management can increase independence. Instruction takes place in the home or in a structured classroom setting.

Orientation and mobility training – training in safe and independent travel skills around your home, your neighborhood Adaptive or assistive technology – terms used for technology that uses magnification, contrast,

synthesized speech, and/or lighting to maximize a person's remaining sight.

Optical low vision aids - prescribed optical devices such as bioptic glasses, often specially created by the doctor to help reach a person's visual goals, or electronic devices, such as the closed circuit television (CCTV), scanners and computer software.

Main problem that all the patients face is tiredness after using low vision devices this problem can easily be solved by counseling. There is a lack of counselor in low vision department of Mayo Hospital. Financial commitment is another problem for poor patients.

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