Research Article

Non-acceptance of Low Vision Aids (LVADs) among patients presented to Eye OPD in Poly Clinic Hospital Islamabad

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ABSTRACT

Background: Vision impairment is a public health problem and every patient with visual impairment doesn't accept low vision aids (LVA's).

Objective: To explore the non-acceptability rate of low vision aids with the reasons for not opting for them.

Methods: A cross-sectional study was conducted at the Department of Ophthalmology in the Polyclinic Hospital, Islamabad. A sample of n=100 Patients in the selected age groups 20 to 80 years diagnosed with age-related macular degeneration, retinitis pigmentosa, diabetic retinopathy, high myopia/hypermetropia, optic atrophy/neuropathies, and glaucoma were recruited using non-probability purposive sampling technique. Data was collected using a predefined form to determine the willingness of low-vision patients to adopt LVAs. The non-acceptance rate was calculated as the percentage of participants declining LVA services, assessed through their responses on the form.

Results: The mean age of the participants was 43.48±14 with a range from 20 to 80 years. A total of n=100 patients out of which n=58 were males and n=42 were females. Among these n=100 patients, n=91 patients show non-acceptance with a gender distribution of n=53 male and n=38 female patients. The major reason for non-acceptance was unaffordability for LVA among males (n=19) and n=06), followed by usage difficulty, transportation, fear of losing jobs, social stigma, low necessity, and lack of awareness.

Conclusion: Non-acceptance of low vision aids among the study population due to unaffordability, compounded by social stigma, financial constraints, and limited awareness, underscores the need to address these barriers for better device utilization and enhanced quality of life for visually impaired individuals.

Keywords: blindness; vision aids; visual impairment

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INTRODUCTION

Visual impairment has become increasingly common as a primary ailment, as well because of numerous diseases including diabetic retinopathy [1]. The Visual Impairment Expert Group (VIEG) estimates that 253 million individuals around the world are blind or visually impaired [2]. Roughly 89% of the visually impaired population resides in low- and middle-income countries. Low visual impairment ranges from age-related macular degeneration, retinitis pigmentosa, diabetic retinopathy, high myopia/hypermetropia, optic atrophy/neuropathies, to glaucoma etc [3].

According to reports, people with visual impairment have a lower quality of life and experience worse health outcomes [4]. With a boom in digitalization, there has been an inevitable dependence on good eyesight to fulfill job responsibilities among people from all walks of life [5,6] Visual impairment (VI) is linked to an increased risk of falling, fracturing a bone, and death.[2,7] Compared to the general population, people who are sighted, and those who are visually impaired are more likely to experience psychological issues including anxiety and depression [8].

Visual impairment can be corrected by using low-vision aid devices. A few of the prescribed low vision aid devices include reading glasses, telemicroscope glasses, magnifiers, screen readers, and clip-on loupes. Not every patient diagnosed with a visual impairment and recommended visual aid accepts it [10]. As per the studies published, the reasons range from/are not limited to "lack of awareness, social stigma attached with using aid devices, non-seriousness in realizing the magnitude of the diagnosis, usage difficulty, and fear of loss of the job [11, 12, 13]. Furthermore, factors like profession, age, and magnitude of the problem also have a role to play in the acceptance of low-vision aid devices [11,15]. With a plethora of reasons and factors contributing to the patient's decision, there has been staggering diversity among patients belonging to different socio-economic classes. Here, factors like lack of financial power and awareness can explain the pattern of acceptance of low vision aids [14].

Patients with low vision would benefit from vision rehabilitation with LVAPs because it would improve their quality of life, lessen their reliance on family members, and cut down on the medical expenses related to the secondary and tertiary disabilities that result from their primary impairment. A study showed that the worldwide utilization of low vision services is alarmingly low, not just in Low and middle - income. Hardly 5- 10% of the visually impaired population uses these resources [16].

The present study aims to investigate the rate and reasons for non-acceptance of low vision aids among individuals with different ocular diseases causing low vision across different age groups. By understanding the factors contributing to non-acceptance, the study seeks to inform strategies for promoting awareness, reducing social stigma, and improving access to low vision aids, ultimately enhancing the quality of life for individuals with visual impairments.

METHODOLOGY

A cross-sectional study was conducted on patients visiting the Department of Ophthalmology (FGPC.1/12/2020/Ethical-Committee) in the Polyclinic Hospital, Islamabad from May 2021 to May 2022.

The study included n=100 patients diagnosed with age-related Macular degeneration, retinitis pigmentosa, diabetic retinopathy, high myopia/hypermetropia, optic atrophy/neuropathies, and glaucoma. Patients under the age of 18 were excluded from the study. The participants were thoroughly informed about the study prior to their participation. The written informed consent was taken in written form from all the patients.

The WHO validated questionnaire for LVA's entailed general, subject characteristic questions i.e., age, gender, and profession along with more specific questions regarding the diagnosis, seriousness of vision impairment, acceptance of low vision aid, and reason for the former's non-acceptance where applicable.

A scale from 1 to 5 based on WHO-ICD 10 criteria was used to rate the severity of vision loss. This measure divided visual impairment into five separate categories of escalating severity. When the best-corrected distance visual acuity in the better eye was between worse than 6/18 (0.50) and better than or equal to 6/60, it was considered to have mild visual impairment (VI). When we reached Category 2, we came across Moderate VI, which is defined as having a best-corrected distance visual acuity in the better eye that is worse than 6/60 (1.00) and better than or equal to 3/60. Severe VI was classified as Category 3 if the better eye's best-corrected distance visual acuity was poorer than 3/60 (1.30) and better than or equal to 1/60, or if the better eye's visual field was smaller than 10 degrees in radius around central fixation. When the best-corrected distance visual acuity in the better eye was worse than 1/60 but better than or equal to light perception, it was at Category 4, the most serious level, which corresponded to blindness. A complete lack of light perception was represented by the highest category of blindness, Category 5 [3].

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The numerical data was presented as mean ($\bar{x}$), and standard deviation (σ), while categorical data was presented as frequency (n) and percentages (%).

RESULTS

During our research, we examined a total of one hundred (n=100) clinical case files, of which n=58 was male and n=42 was female. the mean age of 43.48±14 years, while divided also into 6 categories, including 20-30, 31-40, and 41-50, 51-60, 61-70, and 71-80 years.

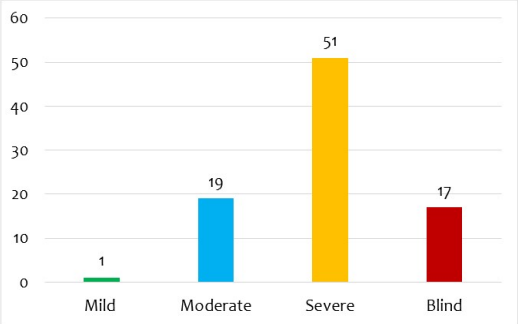

Figure 1: Severity of Visual Impairment

A total of n=1 participant mild visual impairment, n=19 have moderate, n=51 have severe while n=17 have blindness. (Figure 1)

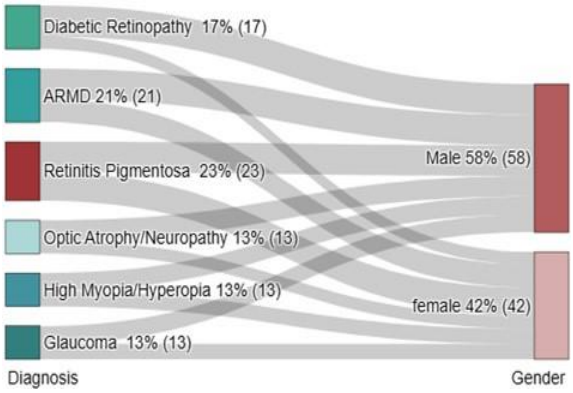

Figure 2: Gender based distribution of causes behind visual impairment.

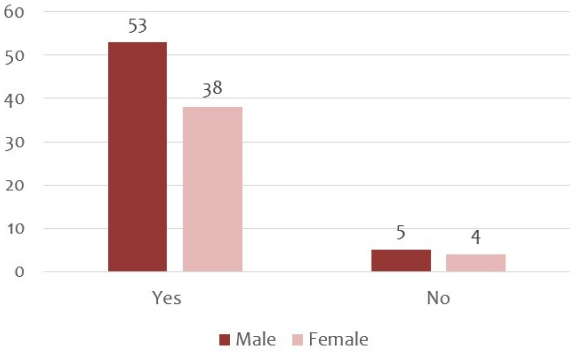

Figure 3: Genders based frequency distribution of LVAs non acceptance.

The results showed that majority of male (n=53) and female (n=38) have non acceptance of LVAs, while n=5 male and n=4 female have acceptance of LVAs. (Figure 3)

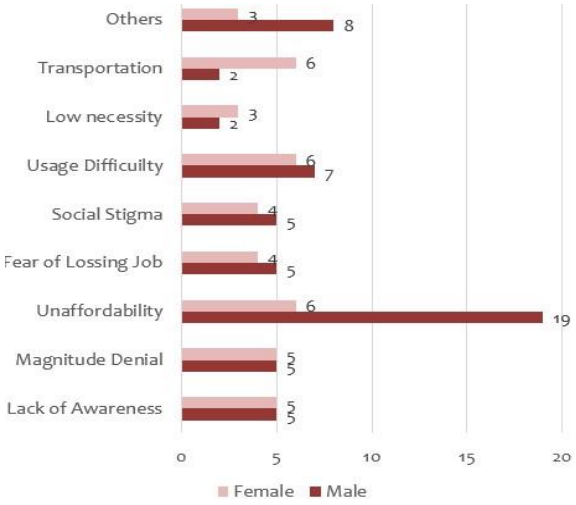

Figure 4: Reason for non-acceptance of LVA's among both genders

The major reason of non-acceptance was unaffordability for LVA among the male (n=19), remaining reasons can be seen in figure 4.

DISCUSSION

The current study was carried out on patients with low vision to investigate the rate of non-acceptance and the reasons for non-acceptance. The findings suggest that the non-acceptance rate is very high, and unaffordability was the main reason, the participant considered for non-acceptance of LVAs.

Low vision devices (LVDs) play a critical role in the field of vision rehabilitation [17]. Maximizing the utilization of assistive technology presents a practical and effective approach to reducing the reliance on individuals with low eyesight. Our study included a cohort of patients, among whom the prevailing cause of impaired vision was found to be Retinitis Pigmentosa. This was followed by Age-Related Macular Degeneration and Diabetic Retinopathy. A recently published study demonstrated findings consistent with our own research, indicating that diabetic retinopathy (DR), retinitis pigmentosa (RP), and age-related macular degeneration (ARMD) were the primary aetiologies of low vision among their patient population [18]. The findings presented in this study contradict the results of a prior investigation conducted by Khimani KS et al in 2014, when uncorrected refractive errors were identified as the primary factor contributing to low vision [19].

The current study showed that non acceptance rate was high among both male and female low-vision patients presenting to our clinic. There was a lot of barriers to avail of the low vision services including non-affordability, followed by fear of losing a job, low necessity, lack of awareness, and

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magnitude denial in male. However, in female transportation, usage, and unaffordability were the commonest barriers to avail low vision services. The possible reasons for non-acceptance of LVAs may be limited access to information about, societal misconceptions and negative stereotypes, limited financial means, coping with the emotional and psychological aspects of vision loss, geographic or socioeconomic factors, differences in cultural attitudes and the emotional impact of vision loss can influence an individual's readiness to accept and use aids[17,20,3] Previously published studies showed that transportation challenges and accessibility, affordability and social stigmas were the main reasons of non-acceptance [17,19,21,22].

Recent studies published revealed contradictory results to our study that the unaffordability rate was only 10.5%. This was because the hospital provided financial assistance to these patients [19, 23]. Another recently published study in Pakistan showed that non-acceptability was about 54.9% despite receiving financial aid [17]. Individuals diagnosed with Retinitis pigmentosa (RP) were likely the leading cause of non-acceptance of low vision aids in our study. Retinitis Pigmentosa is a retinal disease affecting the rod cells of the retina; consequently, the patient's central vision is unaffected, and he avoided low vision aids [17, 22]. The literature showed that patients with retinitis pigmentosa had the highest rate of refusal. Eighty percent to ninety percent of LVAP users rely on their devices for near vision reading, hence this result was expected [17, 26]. Patients with retinitis pigmentosa often have normal or even improved central vision well into the later stages of the illness the most probable reason for non-acceptance [17, 21].

The present study also unveiled that factors such as unemployment, social stigma, limited understanding, and low perceived necessity serve as barriers to the acceptability of LVAs among both males and females. The current study explained that the prevalence of non-acceptance among males over job loss was more pronounced, whereas for females, the societal stigma of being labeled as visually impaired served as a barrier. Literature showed that lack of awareness, social stigma, unavailability, and low affordability were the common reasons for non-acceptance among LVA patients [23, 25]. Stigma is a potent phenomenon that exerts a tremendous impact on individuals who experience it. Stigma has been found to relate to various negative outcomes, including weak physical health, poor mental health, disadvantaged socio-economic status, and academic underperformance. Studies showed that stigma plays a vital role in non-acceptance of LVAs among all patients [3, 18]. LVAs are cumbersome, complicated, and time-consuming, occupy too much space, have insufficient magnification power, and have poor ergonomics; these are some of the obstacles to their adoption and use [25].

Due to the limited population size, the primary reason for the non-acceptance of LVADs cannot be ascertained, this is the limitation of our study.

CONCLUSION

The study highlights a notable rate of non-acceptance of low vision aids among patients, primarily due to unaffordability. Barriers like social stigma, financial constraints, and limited awareness contribute to this non-acceptance trend. Future analytical studies on the topic are needed with large sample size and diversity, to determine actual reasons of non-acceptance among the study population. Moreover, realizing the economic conditions of majority of the population of Pakistan, improving the affordability of these devices has the potential to impact the acceptance rate.

DECLARATIONS & STATEMENTS

Author's Contribution

QAM: substantial contributions to the conception and design of the study.
CMM and AA: acquisition of data for the study.
SA and MS: interpretation of data for the study.
MS: analysis of the data for the study.
MS and SU: drafted the work.
QAM, CMM, AA, SA, MS and SU: revised it critically for important intellectual content.
QAM, CMM, AA, SA, MS and SU: final approval of the version to be published and agreement to be accountable for all aspects.
of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. All authors contributed to the article and approved the submitted version.

Ethical Statement

The study was conducted in patients visiting the department of Ophthalmology (FGPC.1/12/2020/Ethical-Committee) in the Polyclinic Hospital, Islamabad from May 2021 to May 2022.

Consent Statement

Informed consent was obtained from all subjects involved in the study.

Data Availability Statement

The data presented in this study are available on request from the corresponding author.

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Conflicts of Interest

The author(s) have declared no conflicts of interest with each other.

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