Research Article

Addressing the Unmet Needs: Implementation of a New Low-Vison Department in a Specialized Eye Care Hospital in Bangladesh

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Abstract

Low vision is a significant public health concern, often overlooked in Bangladesh and other developing countries. Many individuals with low vision are unaware that their condition is permanent and requires adaptation. This study aims to assess the outcomes and patient satisfaction with the newly established low-vision department at Sheikh Fazilatunnessa Mujib Eye Hospital and Training Institute (SFMEHTI) in Gopalganj, Bangladesh. The study also explores the department's integration with the KHEA Foundation. This reputable nonprofit organization, the KHEA Foundation, plays a vital role in this initiative by providing free low-vision devices, including binocular telescopes for distance vision and handheld magnifiers for near vision. The instrumental support for this project is provided by The KHEA Foundation.

The study involved 189 patients who received treatment at the new department over the past year and agreed to participate in the research. Considering many factors, this comprehensive and meticulous evaluation provides valuable insights into the department's effectiveness. The average age of the participants was 31.82 years, ranging from 5 to 68 years, with a standard deviation of ±12.74. The largest age group was 31-45 years (44.5%), followed by 16-30 years (35.56%). Among the participants, 59.32% were male and 40.68% were female. Many patients had moderate visual impairment (45%), followed by severe visual impairment (35.4%) and blindness (19.6%). The most common causes of low vision were Macular Dystrophy (29.1%) and Retinitis Pigmentosa (27.5%).

The results indicate high patient satisfaction with the new low-vision services, reflecting overwhelmingly positive outcomes. Of the 189 patients, 155 (82%) reported satisfaction with the services, while 32 (18%) were unsatisfied. These findings not only highlight the positive impact of the new department on patient care but also instill a sense of optimism about the future of low-vision care.

Keywords: Low-Vision; Satisfaction; Bangladesh

Introduction

Someone who experiences visual impairments that persist even after treatment and standard refractive correction. This individual has a visual acuity of less than 6/18 down to light perception or a visual field restricted to less than 10 degrees from the point of fixation. Despite these challenges, the person can use, or has the potential to use, their vision for planning and carrying out tasks [1]. Intending to cater to the specific needs of the visually impaired and reduce social and economic exclusion, a new low-vision department has been established to address this gap in Sheikh Fazilatunnessa Mujib Eye Hospital and Training Institute (SFMEHTI) in Bangladesh and integrated with KHEA Foundation, a non-government, non-profit social organization, to enhance accessibility to crucial services for a broader population in SFMEHTI.

SFMEHTI operates as the flagship center for National Eye Care under the Ministry of Health and Family Welfare. Ophthalmologists leverage telemedicine to extend their services to remote areas, ensuring broader access to quality eye care.

Moreover, the institute's commitment to education is evident in its research cell and regular workshops that foster human resource

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development in research methodology. SFMEHTI's role in education, offering courses such as the Mid-Level Ophthalmic Assistant Course (MLOP) and Postgraduate Diploma programs, underscores its dedication to professional development, making the patients feel the institution's commitment to nurturing skilled professionals in eye care.

Establishing a low-vision department at SFMEHTI signifies a transformative shift in eyecare practice. This initiative uniquely addresses the unmet needs of those with low vision and emphasizes patient empowerment and well-being. The audience should feel the significant impact of this initiative on eyecare practice in Bangladesh, making them aware of the institution's pioneering role in this transformative shift.

The initiatives of inclusive low-vision care services address the immediate needs of the visually impaired, setting a sustainable precedent for inclusive, patient-centered healthcare, marking a significant stride toward comprehensive and transformative eye health.

This study is designed to evaluate the outcomes and satisfaction of the newly introduced department in meeting the needs of individuals with low vision, specifically focusing on its integration with the KHEA Foundation and possible future directions for these services.

Methods

This research employs a comprehensive mixed-methods approach, combining quantitative metrics such as severity of visual impairment and patient satisfaction with qualitative insights from interviews with department staff and patients. The study population was one hundred eighty-nine (189) patients who received treatment from the newly developed low-vision department during the last year and were willing to participate in this study.

The KHEA Foundation is a nonprofit organization that provides low-vision devices (a binocular telescope for distant vision and a hand-held magnifier for near vision) free of cost to patients. SFMEHTI provides free spectacles to patients.

A 5-point Likert scale was employed to assess satisfaction levels as very dissatisfied (1 point), dissatisfied (2 points), neutral (3 points), satisfied (4 points) and very satisfied (5 points). Patients were separated into satisfied (≥4) and dissatisfied (≤4) groups.

This thorough approach allows for a comprehensive evaluation of the newly introduced department's outcomes and effectiveness.

Results

Our study revealed a diverse age range among the patients, with a mean age of 31.82 years and a standard deviation of ±12.74. Notably, the 16-30 age group, accounting for 34.9% of the patients, and the 31-45 age group, accounting for 44.5%, were the most significant. This underscores the urgency to address low-vision issues in the younger population. Regarding gender distribution, 58.7% of the patients were male, and 41.3% were female.

In this study, visual impairment was categorized into three groups: Category 1: Moderate visual impairment – presenting visual acuity worse than 6/18 and better than 6/60; Category 2: Severe visual impairment – presenting visual acuity worse than 6/60 and better than 3/60 and Category 3: Blindness – presenting visual acuity worse than 3/60 and better than 1/60 [2]. 42.9% of the patients had moderate visual impairment, 37.5% had severe visual impairment and 19.6% had blindness (Table 1). Macular Dystrophy (29.1%) was the most frequent cause of low vision, followed by Retinitis Pigmentosa (27.5%) (Table 2).

Our study found that the newly established low-vision department offered treatment in four categories. 28.1% of the patients received both spectacles and low-vision devices (LVDs), 27% received only spectacles, 19% received only LVDs, and 25.9% received only counseling. Notably, the vision of these 25.9% of the patients was not improved by spectacles or LVDs (Table 3).

A 5-point Likert scale was employed to assess satisfaction levels as very dissatisfied (1 point), dissatisfied (2 points), neutral (3 points), satisfied (4 points), and very satisfied (5 points). Patients were classified into satisfied (≥4) and dissatisfied (≤4) groups for analysis. The results were reassuring, with 155 out of 189 patients (82%) expressing satisfaction with the new low-vision services. This high level of satisfaction is a testament to the effectiveness of the department and its contribution to improving overall hospital dynamics, whereas 34 patients (18%) were not satisfied.

To investigate the persuasive determinants that affect the patient's satisfaction, this study used six factors (age, gender, education, occupation, marital status, and categories of visual impairment) against the patient's satisfaction. Bivariate Chi-square ($\chi 2$) analysis suggested that patient satisfaction was significantly associated with age. This finding is crucial, as it indicates that younger patients were more satisfied than seniors, and patients with moderate visual impairment were more satisfied than those with severe visual impairment and blindness.

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Gender	Visual Impairment			Total
	Moderate VI	**Severe VI**	**Blindness**	
Male	44	36	31	111 (58.7)
Female	37	35	6	78 (41.3)
Total	81 (42.9%)	71 (37.5%)	37 (19.6%)	189 (100%)

Table 1: Severity of Visual Impairment.

Causes	Number	Percentage
Macular Dystrophy	55	29.1
Retinitis Pigmentosa	52	27.5
Amblyopia	18	9.5
Optic Atrophy	15	7.9
Albinism	14	7.4
Pathological Myopia	10	5.3
Chorio-Retinal Atrophy	07	3.7
Microphthalmia and Nystagmus	06	3.3
Others	12	6.3
Total	189	100

Table 2: Causes of low-vision in the Study Population.

Treatment Provided	Number	Frequency
Both LVDs and Spectacle	53	28.1
Only LVDs	36	19.0
Only Spectacle	51	27.0
Only Counselling	49	25.9
Total	189	100

Table 3: Treatment Provided.

Determinants	Frequency (%)	Satisfaction Level Satisfied (Not Satisfied)	p-value
Age Group (Years)			0.009*
Up to 15	14 (7.4)	12 (2)	
16-30	66 (34.9)	58 (8)	
31-45	84 (44.5)	74 (10)	
46-65+	25 (13.2)	11 (14)	
Gender			
Male	111 (58.7)	95 (16)	0.687
Female	78 (41.3)	60 (18)	
Educational			
Illiterate	30 (15.9)	22 (8)	0.738
Primary	43 (22.7)	36 (7)	
SSC	51 (27.0)	42 (9)	
HSC and Higher	65 (34.4)	55 (10)	

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Marital Status			
Married	89	73 (16)	0.578
Single	74	63 (11)	
Others	26	19 (7)	
Occupation			
Students	63	55 (8)	0.632
Farmer	25	20 (5)	
Business	21	16 (5)	
Job	23	16 (6)	
Housewife	45	38 (7)	
Others	12	9 (3)	
Visual Impairment (VI)			
Moderate VI	81 (42.9)	76 (5)	
Severe VI	71 (37.5)	55 (16)	0.005*
Blindness	37 (19.6)	24 (13)	

Table 4: Socio-demographic characteristics of the study subjects and different determinants of patient satisfaction.

Qualitative findings

Patient's perspective

- Patients also appreciated receiving care customized to meet their requirements, such as including individualized recommendations for assistive devices and providing them free of cost with coping strategies.
- Patients were happy after receiving new services, counseling, and assistive devices.
- Patients frequently expressed feelings, such as relief from obtaining assistance and frustration with their vision impairment.
- A few patients, especially the elderly, reported that assistive technology may involve a learning curve.
- Patients wanted these initiatives to continue, where they could receive free devices and counseling on how to use them.
- Patients desired to start life-skilled training and social rehabilitation.

Provider's perspective

- The service providers discussed the significance of specific staff training to guarantee that they are informed about the most recent low-vision care procedures.
- Providers emphasized the importance of regularly collecting feedback from patients and staff to adapt services, better meet needs, and enhance overall care.

- Providers also highlighted the importance of raising awareness about the new department within the healthcare system and the broader community.

Discussion

Although the incidence of low vision generally increases with age, this study found that a significant majority (86.8%) of patients were aged 45 years or younger, while only 13.2% were over 46 years old. This trend towards a younger population aligns with findings from Malaysia, Korea, and India, where the proportion of patients under 50 years old was 74%, 69%, and 68%, respectively. In these developing countries, the percentage of low-vision patients aged 60 years and above ranged from 16% to 26% [3-5].

In contrast, studies from developed countries show a different age distribution. In the United Kingdom, Leat and Rumney found that 77% of their patients were 60 years and above [6]. Similarly, in Canada, Elliot., *et al*. found that 66% of their patients were aged 70 or older, while in Australia, Wolffsohn and Cochrane reported that 87% of their patients were 60 years or older. The difference in age distribution might be due to younger family members being less engaged in organizing treatment for elderly relatives [8].

This study found that 82% of participants were satisfied with the low-vision services they received. Similar results were observed in Rawalpindi, Pakistan, where 80.4% of patients reported satisfaction, and at the Khmer-Soviet Friendship Hospital in Cam-

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bodia, 71.1% of patients expressed satisfaction. This study's high level of satisfaction could be attributed to the introduction of a new service, as these patients had not previously received treatment. Another key factor contributing to their satisfaction might be the provision of free spectacles and low-vision devices.

In this study, factors such as gender, educational level, marital status, and occupation were not significantly associated with patient satisfaction. However, Adnan Afsar., *et al*. reported that male participants were more likely to be satisfied than female participants. In contrast, a study conducted in Tehran found no significant difference in satisfaction levels between male and female participants. In our study, patients with younger age groups and moderate visual impairment showed a significant association with higher satisfaction levels. Younger individuals might be more motivated to seek and adhere to treatment due to the potential long-term benefits of improved vision on their career and lifestyle, resulting in higher satisfaction when their needs are met.

Patients with moderate visual impairment may notice a more significant improvement in their visual functioning than those with severe impairment and blindness. This noticeable improvement can lead to higher satisfaction levels, as the perceived benefits of the treatment or devices are more pronounced.

Conclusion

It emphasizes the empowerment of visually impaired individuals through a tailored healthcare approach, combining assistive technologies and collaborative partnerships. This initiative meets immediate needs and sets a precedent for sustainable, inclusive eye care worldwide. Continuous adaptation of rehabilitation strategies underscores a commitment to meeting the diverse needs of the low-vision population. The study also highlights the department's positive influence on patient care, instilling optimism about the future of eye care, efficient resource utilization, and its role as a model for comprehensive and inclusive eye care.

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