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PROFILE OF UNIVERSAL SCREENING AND REHABILITATION OF PATIENTS IN RURAL CAMPS: A CROSS-SECTIONAL STUDY

Ophthalomology

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ABSTRACT

Purpose: To evaluate the profile of universal screening and rehabilitation of patients in rural eye camps in Meerut District. **Methods:** A prospective, cross-sectional study was carried out over a one-year period (July 2023 to June 2024) by the Upgraded Department of Ophthalmology, LLRM Medical College, Meerut. A total of 641 individuals were screened during eye camps held in various rural areas of Meerut district. Patients were examined for ocular morbidities, and those requiring surgical intervention were referred to the base hospital for treatment and follow-up. Data were analyzed using SPSS version 22. **Results:** Out of 641 patients, 58% were female and 42% male. The average age of participants was 58.47 years, with the majority being between 51-70 years. Cataract was the most prevalent ocular morbidity (52.42%), followed by refractive errors (15.76%) and glaucoma (6.4%). Among 336 patients diagnosed with cataracts, 64.88% underwent small incision cataract surgery (SICS), 29.17% underwent phacoemulsification, and 5.95% underwent extracapsular cataract extraction (ECCE). Visual outcomes at four weeks post-surgery showed 86.5% achieving a good visual acuity (6/6 to 6/18), with 91.37% experiencing no postoperative complications. Intraoperative complications occurred in 18.5% of surgeries, the most common being posterior capsule rent. **Conclusion:** Rural eye screening and rehabilitation camps are effective in early diagnosis and treatment of ocular diseases. With proper planning and execution, such outreach programs can deliver high-quality ophthalmic care and significantly reduce the burden of avoidable blindness in rural populations.

KEYWORDS

Cataract, Screening camps, Rural health, Ophthalmology, Outreach services

INTRODUCTION

Blindness and visual impairment remain significant public health challenges, especially in developing countries like India, where cataract accounts for the majority of avoidable blindness. Rural populations face additional barriers to accessing timely ophthalmic care due to geographical, financial, and infrastructural constraints. To bridge this gap, community-based screening eye camps have been implemented as a critical strategy under the National Programme for Control of Blindness (NPCB) to detect and manage ocular diseases in underserved regions[1].

In this context, the present study was undertaken to assess the profile of patients attending rural eye camps, evaluate the types of ocular conditions diagnosed, and determine the outcomes of the treatment and rehabilitation efforts, particularly surgical interventions.

Aims And Objectives

Aim: To evaluate the profile of universal screening and rehabilitation of patients in rural eye camps in Meerut District.

Objectives:

1. To screen rural populations for various ocular disorders.
2. To identify and assess the prevalence of major causes of visual impairment.
3. To provide appropriate treatment and surgical rehabilitation.
4. To promote community-based eye care and improve accessibility.

Materials And Methods

Study Design And Duration: This was a prospective, cross-sectional, camp-based study conducted over a one-year period from July 2023 to June 2024.

Study Setting: Eye screening camps were organized in various rural locations of Meerut District by the Upgraded Department of Ophthalmology, LLRM Medical College, Meerut.

Sample Size: 641 individuals were screened.

Inclusion Criteria:
All individuals screened at rural eye camps and willing to participate.

Exclusion Criteria:
Patients unable to provide informed consent.

Screening And Examination: The study was approved by the Institutional Ethics Review Board. Initial screening involved the assessment of visual acuity using Snellen's chart and torchlight examination. Detailed ocular examination including anterior and posterior segment evaluation, tonometry, gonioscopy, and OCT was done at the base hospital for patients requiring further management.

Surgical Management: Cataract surgeries included SICS, phacoemulsification, and ECCE based on individual patient assessment. Post-operative follow-up was conducted at 1 day and 4 weeks.

Data Analysis: All data were entered in Microsoft Excel and analyzed using SPSS Version 22.

RESULTS

Demographics:

- Mean age: 58.47 years
- Gender distribution: 42% males, 58% females

Distribution Of Ocular Conditions

- Cataract 52.42%
- Refractive Errors 15.76%
- Glaucoma 6.40%
- Dry Eye 4.68%
- Retinal disorders 4.06%
- Conjunctivitis 3.28%
- Corneal Opacity 2.65%
- Pterygium 2.34%
- Corneal Ulcer 2.18%
- Strabismus 1.72%
- Blepharitis 1.40%
- Chronic dacryocystitis 1.09%
- Entropion 2.03%

Types Of Cataract Extraction Surgeries Performed:

- SICS: 64.88%
- Phacoemulsification: 29.17%
- ECCE: 5.95%

Visual Acuity Of The Operated Eye:

- Preoperative: 50.60% with vision <6/60
- Postoperative Day 1: 64.88% achieved 6/6–6/18
- Postoperative Week 4: 86.5% achieved 6/6–6/18

Complications:

- Intraoperative: PCR (8.5%), vitreous loss (4%), bleeding (3.1%)
- POD1: AC reaction (7.44%), corneal edema (6.85%)
- 4-Week Follow-Up: Persistent corneal edema (2.68%), PCO (2.08%)

Table 1: Distribution Of Patients According To Gender:

Gender	Count	Percentage (%)
Female	372	58.00
Male	269	42.00
Total	641	100.00

Table 2: Distribution Of Patients According To Age:

Age in Years	No. of Patients	Percentage (%)
0-30	25	3.90
31-40	41	6.40
41-50	62	9.70
51-60	204	31.80
61-70	193	30.10
71-80	109	17.00
>80	7	1.10
Total	641	100.00

Table 3: Distribution Of Ocular Conditions:

Ocular Condition	Number	Percentage (%)
Cataract	336	52.42
Refractive Errors	101	15.76
Glaucoma	41	6.40
Dry Eye	30	4.68
Retinal disorders	26	4.06
Conjunctivitis	21	3.28
Corneal Opacity	17	2.65
Pterygium	15	2.34
Corneal Ulcer	14	2.18
Strabismus	11	1.72
Blepharitis	9	1.40
Chronic dacryocystitis	7	1.09
Entropion	13	2.03
Total	641	100.00

Table 4: Types Of Cataract Extraction Surgeries Performed:

Type of surgery	Number	Percentage(%)
SICS	218	64.88
Phacoemulsification	98	29.17
ECCE	20	5.95
Total	336	100.00

DISCUSSION

The findings from this study highlight the substantial burden of visual impairment in rural populations, primarily due to cataracts. This is consistent with previous findings from Gurung et al.(2019)[2] and Kapoor et al.(1999)[3]The female preponderance indicates potential gender-based disparities in access to healthcare or health-seeking behavior. This trend is also supported by study by Gyasi et al. (2007)[4], which reported that women are more responsive to local outreach services compared to institutional healthcare due to perceived safety and accessibility. The high percentage of patients presenting with severe visual impairment underscores the importance of timely screening and intervention.

Cataract surgery outcomes in the study were favorable and consistent with WHO benchmarks, with the majority of patients achieving good postoperative vision. The relatively low rate of complications further affirms the safety of surgeries conducted through well-structured rural outreach programs.

Furthermore, the study underlines the importance of postoperative follow-up in ensuring long-term visual recovery and detecting late complications like PCO and cystoid macular edema.

CONCLUSION

Community-based eye screening and rehabilitation programs are essential in tackling preventable blindness in rural India. This study demonstrates that with appropriate infrastructure, trained personnel, and follow-up protocols, outreach programs can achieve excellent visual outcomes and serve as an effective model for blindness prevention.

Recommendations

1. Expand rural eye camps under NPCB with enhanced logistics.
2. Improve training for ophthalmic personnel in high-volume settings.
3. Promote awareness campaigns to increase participation.
4. Strengthen follow-up services post-surgery.
5. Encourage public-private partnerships to scale outreach services.

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Conflicts Of Interest: None declared.

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