VIDWAN Journal of Medical and Pharmaceutical Sciences

OPEN ACCESS

PEER-REVIEWED - OPEN ACCESS Vol. 01 · Issue 01 · 2026 · pp. 14-19| ISSN: APPLIED (Online) | INAGURAL EDITION

DRUG UTILIZATION PATTERNS IN THE OPHTHALMOLOGY OUTPATIENT DEPARTMENT OF A TERTIARY CARE TEACHING HOSPITAL

Dr. D. Poojitha, *Department Of Medical Genetics,*
Prathima Institute Of Medical Sciences, Karimangar.

ABSTRACT

Medication usage studies support clinical medication safety and assess physicians' prescribing practices. The study looks at drug types, polypharmacy, prescription patterns, and common eye conditions in the Ophthalmology Outpatient Department of a tertiary care teaching hospital. The study looks at the average number of prescriptions, generic names, fixed-dose combinations, antibiotics, corticosteroids, and how well patients adhere to treatment plans and take critical drugs. Outpatient prescriptions are monitored in a prospective observational research. The findings should shed light on current prescription writing practices, point out areas for improvement, and help advance patient safety, rational drug usage, the eradication of needless medication use, and the best possible therapeutic outcomes for eye care.

Keywords: *Drug utilization pattern; Ophthalmology outpatient department (OPD); Prescription pattern; Rational drug use; Tertiary care teaching hospital; Prescribing indicators;Polypharmacy;Essential medicines; Ophthalmic drugs*

Article history: Received 7 July 2026 · Revised 19 July 2026 · Accepted 28 July 2026 · Published 7 August 2026

1. INTRODUCTION

Optic disorders and eyesight loss are global health issues. Life quality and social/economic stability are declining across all age groups. Hospitalization is not required for patients with conjunctivitis, dry eye syndrome, cataracts, glaucoma, allergic eye illnesses, or refractive issues. Vision is saved by early detection and treatment. Longer lifespans and population shifts exacerbate eye issues. Thus, pharmaceutical therapy that is safe, efficient, and reasonably priced is required.

Medication use study improves clinician recommendations and clinical medication safety. These studies look at the prescription, dispensing, and use of drugs. This demonstrates the use of medications, adherence to treatment plans, and improper prescribing. Glaucoma and dry eye disease require long-term topical treatment. Therapy reduces adverse effects, drug interactions, and medical costs when prescribed carefully. Prescription trends assess fixed-dose combinations, generics, and polypharmacy.

Tertiary care teaching hospitals are excellent examples of prescription writing because they serve a large number of patients with a variety of issues. The most commonly prescribed drug classes, indicators, and evidence-based recommendations are shown by outpatient ophthalmology medication trends. Evaluations improve provider productivity and patient care. The results enhance institutional prescription, encourage the use of smart eye medications, and offer baseline data for studies on drug consumption and pharmacovigilance. Drug use was evaluated in the Ophthalmology Outpatient Department of a tertiary care teaching hospital.

2. METHODOLOGY

Study Design and Setting

The pharmacology and ophthalmology departments of a tertiary care teaching hospital carried out a prospective, observational, cross-sectional study on drug use. Using WHO essential prescribing indicators, the

study looked at how patients in the Ophthalmology Outpatient Department (OPD) used and modified their prescriptions.

Study Duration

January through December of 2021 was considered a year.

Study Population

The study was carried out on ophthalmology outpatients. One qualified patient at a time was introduced in order to reach the necessary sample size.

Sample Size

119 eligible participants' prescriptions were examined for changes in medication use.

Eligibility Criteria

Inclusion Criteria

The study included ophthalmology outpatients who were administered eye medicines, regardless of their age or gender.

Exclusion Criteria

The study excluded patients with cataracts or glaucoma, those hospitalized to the inpatient ophthalmology unit, and those lacking prescription information.

Data Collection

Future data was gathered using a standard Case Record Form (CRF). Complete patient information, such as age, gender, OPD registration number, current symptoms, clinical diagnosis, and prescription drugs. The medicine name, dosage form, strength, dose, frequency, length of therapy, route of administration, and brand-name or generic status are all included in the prescription. Fixed-dose combos (FDCs) were also found.

Assessment of Drug Utilization

WHO Core Prescribing Indicators were used to measure drug usage. We looked at the percentage of antibiotics, injections, and WHO Essential Medicines List (EML) medications prescribed, the average number of prescriptions advised each visit, the use of fixed-dose combinations, and the percentage of antibiotics. Additionally, therapeutic medication classes prescribed in departments of outpatient ophthalmology were investigated.

Outcome Measures

Finding out how often ophthalmology outpatients swallowed their prescriptions was the main goal. The secondary results looked at prescription trends, fixed-dose combinations, generic prescriptions, WHO Essential Medicines List prescriptions, medicine administration, and antibiotic use.

Statistical Analysis

Descriptive statistics were used to evaluate the data after it was imported into Excel 2019. Rates and percentages were used to represent categorical data, whereas mean values were used to represent continuous variables. When possible, tables and diagrams were used to speed up the findings' distribution.

Ethical Considerations

The probe was approved by the Institutional Ethics Committee (IEC). While using all data for research, the study protected patient privacy.

3. MATERIALS AND METHODS

Need for Drug Utilization Studies

Drug utilization studies endeavor to promote the responsible use of pharmaceuticals by identifying patterns in improper prescribing and enhancing patient care.

Drug Use in Ophthalmology

Frequently, ocular problems are addressed with topical medications, including antibiotics and lubricants. In order to deliver safe, effective, and evidence-based care, prescription procedures must undergo consistent evaluation.

Challenges in Current Prescribing

In ophthalmic care, the abuse of antibiotics, a scarcity of generic prescriptions, and restricted access to essential pharmaceuticals continue to be significant issues, resulting in increased treatment costs and antibiotic resistance.

Basis for the Present Study

This investigation examined the utilization of medications in the ambulatory ophthalmology department of an academic tertiary care eye hospital. Utilizing WHO core prescribing indicators, we motivated physicians to exercise greater caution when prescribing medications.

4. RESULTS AND DISCUSSION

From January to December 2021, the trial enrolled 119 participants. Figure 1 illustrates the data analysis.

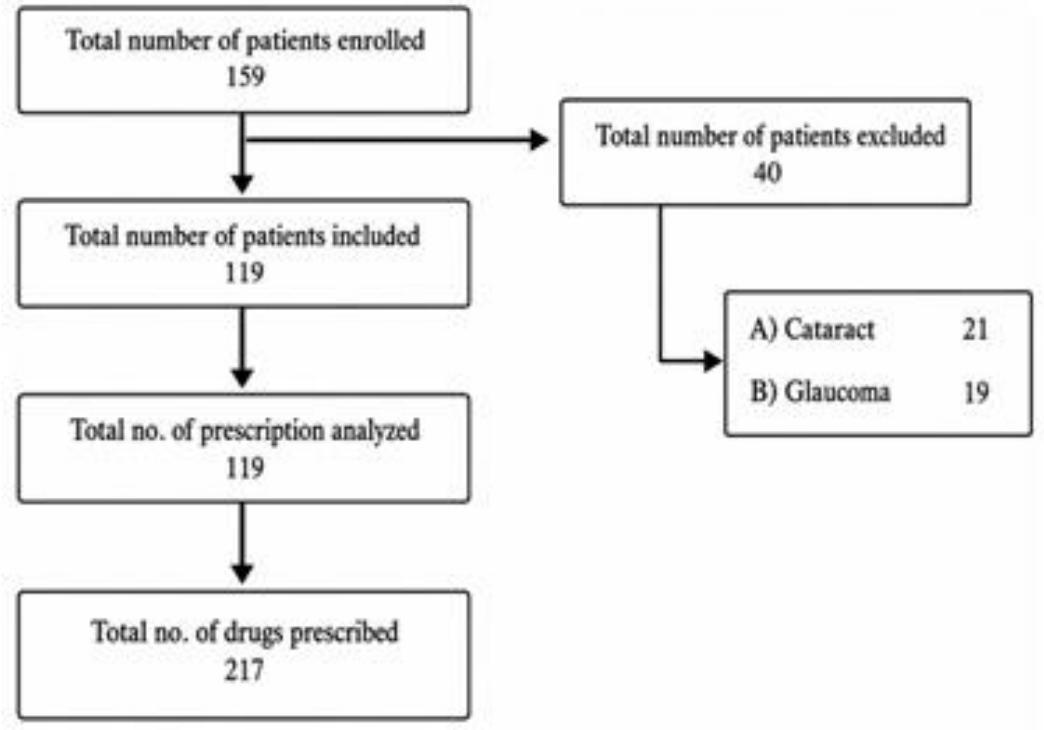

Figure 1. Patient and prescription data

Demographic Characteristics

- Total patients included: 119
- Male: 73 (61%)
- Female: 46 (39%)

Age distribution

- The patient demographic with the highest prevalence was those aged 46 to 60 (27%).
- 24% of the population was between the ages of 31 and 45.

Patient status

- New patients: 96 (81%)
- Follow-up patients: 23 (19%)

Most common clinical presentation

- Refractive error: 33 patients (27.73%)

WHO Core Prescribing Indicators

217 drugs were administered in 119 encounters.

WHO Prescribing Indicator	Result
Average number of drugs per encounter	1.83
Drugs prescribed by generic name	8 (4%)
Drugs prescribed by brand name	209 (96%)
Encounters with antimicrobial prescription	73 (33.64%)
Encounters with injection prescribed	0 (0%)
Drugs prescribed from WHO Essential Drug List	19 (8.75%)

Distribution of Drug Groups Prescribed

These drug classes were the most prevalent among 217 prescriptions:

Drug Group	Number	Percentage
Lubricants	78	35.45%
Antimicrobials	72	32.73%
Micronutrients	16	7.27%
Antihistamines	13	5.91%
Corticosteroids	9	4.55%
NSAIDs	8	3.64%
Proton Pump Inhibitors	8	3.64%
Anticholinergics	7	3.64%
β-blockers	4	1.82%
α1-agonists	1	0.90%
Carbonic anhydrase inhibitors	1	0.45%

Antimicrobials are absent from the majority of medications (51.26%). The distribution of antibacterial groups is illustrated in Figure 2. Fluoroquinolones comprised 78% of the prescribed medications, as illustrated in Figure 2. Moxifloxacin was the most prevalent fluoroquinolone, accounting for 74% of the total, with cefixime immediately following.

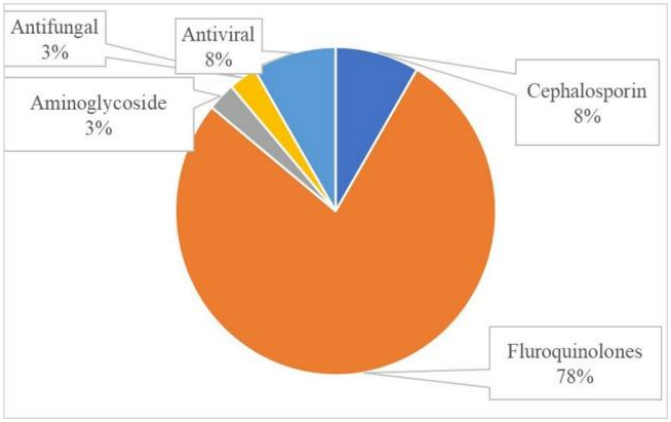

Figure 2. Groups of antimicrobials

96% of the 217 ophthalmology outpatient medicines prescribed were brand-name. Refer to Figure 3.

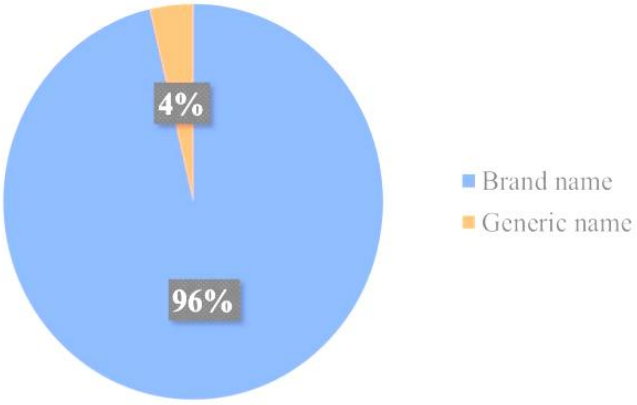

Figure 3. Drugs prescribed by Generic and Brand name

In the ophthalmology outpatient department, topical approaches accounted for 88 (74%) of medicine delivery, while oral routes accounted for 31 (26%). No parenteral medications were administered.

Figure 4 illustrates that 86% of the medications were not included in the WHO Essential Drug List.

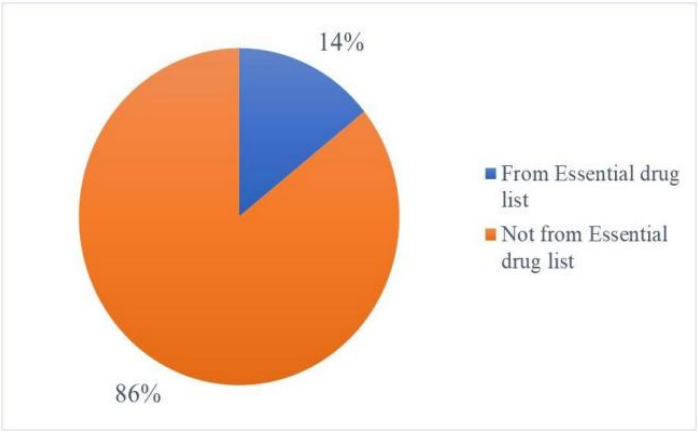

Figure 4. Percentage of drugs prescribed from Essential drug list

Fixed Dose Combinations (FDCs)

- FDCs were not present in 95% of prescriptions.
- The FDCs that were recommended were unnecessary.
- The FDC that is issued the most frequently is:

Naphazoline + Phenylephrine + Carboxymethylcellulose.

5. CONCLUSION

A tertiary care teaching hospital's outpatient ophthalmology department wrote most scripts that met patients' clinical needs and followed treatment guidelines. The most frequently prescribed topical ocular therapy included lubricants, anti-inflammatory, antibacterial, and antiglaucoma treatments. In order to enhance patient outcomes, mitigate adverse drug reactions, and deliver cost-effective ophthalmic healthcare, it is imperative to implement prescription audits, generic prescribing, adherence to the essential medicines list, and drug utilization evaluations.

REFERENCES

[1] Bhatt JH, Verma S, Bagde S, Sane RM, Shahani S. Drug utilization study in ophthalmology in OPD patients at a tertiary care teaching hospital. Int J Basic Clin Pharmacol. 2018;7(2):315-8.

[2] Mirza NY, Desai S, Ganguly B. Prescribing pattern in a pediatric out-patient department in Gujarat. Bangladesh J Pharmacol. 2008;4(1):39-42.

[3] Hogerzeil HV. Promoting rational prescribing: an international perspective. Br J Clin Pharmacol. 1995;39(1):1-6.
[4] World Health Organization. Introduction to drug utilization research. Oslo, Norway: WHO; 2003. Available from: http://apps.who.int/medicinedocs/en/d/Js4876e/
[5] Tb N, As K, Hn P, Sd J. Drug utilization study in ophthalmology outpatient department in a government tertiary care hospital in Maharashtra. Asian J Pharm Clin Res. 2018;11(7):267 70.
[6] Desalegn AA. Assessment of drug use pattern using WHO prescribing indicators at Hawassa University teaching and referral hospital, South Ethiopia: a cross-sectional study. BMC Health Serv Res. 2013;13:170. doi:10.1186/1472-6963-13-170
[7] Faryna A, Wergowske GL, Goldenberg K. Impact of therapeutic guidelines on antibiotic use by residents in primary care clinics. J Gen Intern Med. 1987;2(2):102-7.
[8] Shankar RP, Partha P, Shenoy NK, Easow JM, Brahmadathan KN. Prescribing patterns of antibiotics and sensitivity patterns of common microorganisms in the internal medicine ward of a teaching hospital in Western Nepal: a prospective study. Ann Clin Microbiol Antimicrob. 2003;2:7.
[9] Kauser H, Chopra D, Mukherjee S, Mohan P. Pharmacoepidemiological observational study of antimicrobial use in outpatients of ophthalmology department in North Indian population. J Pharm Bioallied Sci. 2018;10(2):72-6.
[10] Banerjee I, Bhadury T, Sengupta T, Roy D. Drug utilization study in ophthalmology out-patient department of a medical college in India. Ann Med Health Sci Res. 2014;4(4):667-70. doi:10.4103/2141-9248.139372
[11] Suman RK, Gore VS, Mohanty IR, Israni N, Deshmukh YA. Drug utilization patterns of drugs used in the ophthalmology outpatients department at tertiary care hospital. World J Pharm Res. 2015;4(6):2162-70.
[12] Tahashildar J, Singh RS, Tahashildar J. Evaluation of drug utilization pattern in ocular diseases concerning pharmacoepidemiology in outpatient. J Pharmacol Clin Res. 2019;7(1):555703. doi:10.19080/JPCR.2019.07.555703
[13] Biswas NR, Jindal S, Siddiquei MM, Maini R. Patterns of prescription and drug use in ophthalmology in a tertiary hospital in Delhi. Br J Clin Pharmacol. 2001;51(3):267-9.
[14] Singh J, Biswas NR, Jain SK, Das GK. Prescribing trends in ophthalmology. Indian J Clin Pharmacol Ther. 1998;18(4):79.
[15] Jadhav PR, Moghe VV, Deshmukh YA. Drug utilization study in ophthalmology outpatients at a tertiary care teaching hospital. Int Sch Res Notices. 2013;2013(1):768792.
[16] Prajwal P, Rai M, Kumar KS, Bhat US, Dsouza FV. Drug utilization pattern in the ophthalmology department at a tertiary care hospital. Int Res J Pharm. 2013;4(8):205-10.
[17] Mohammed S, Thomas AM, Joy A, Abraham AA, Sravya D, Hiremath D. Drug utilization study in ophthalmology outpatient department of a tertiary care teaching hospital. Indian J Pharm Pract. 2021;14(3):162-8.

