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Analysing Drug Utilization Study On Ophthalomology Outpatient At A Secondary And Tertiary Care Hospital's In Dharmapuri District

Dr. K.L.SenthilKumar[1], DrP.D.Gokulan[2],A. Vasanthan[3],Sowmiya[4]. A, Jai GokulKrishna[4]. R,Priya[4].J

[1]*Principal, Sri VijayVidyalayaCollege of Pharmacy,Dharmapuri,Tamilnadu.*
[2]*Professor & Head, Sri VijayVidyalayaCollege of Pharmacy, Dharmapuri, Tamilnadu.*
[3]*Associate professor, Sri VijayVidyalayaCollege of Pharmacy,Dharmapuri, Tamilnadu.*
[4]*Students, Sri VijayVidyalayaCollege of Pharmacy, Dharmapuri, Tamilnadu*

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ABSTRACT
Ophthalmology is a surgical sub specially within medicine that deals within the diagnosis and treatment of eye disorder. Drug utilization studies defined as a study of marketing, distribution, prescription and use of drugs in a society. Ophthalmic of eye disorder were treated with various forms of medicines that available in Eye Drops, Eye Ointment, Tablets, Capsules.

Objectives: To describe the patterns of prescription and drug use at ophthalmology in out-patient department (OPD) and to study the current prescribing and drug utilization pattern in Ophthalmology Department at Secondary and Tertiary care hospitals in Dharmapuri district. To study category of drugs prescribed to Ophthalmology diseases. To identify the most commonly prescribed drugs for Ophthalmology diseases**.**

Results and discussion: Among the whole 340 patients, 185 patients were in male, and 155 were female.of Dharmapuriand surrounding villages. Age wise are categories as 25-50 age as 107 patient, 50-75 age as 99 patients, above 75 age as 87 patients. Number of drugs prescribed of drug by patient in One day 46.1%, for Three days 11.4%, for Six days 1.7%.Among disease condition of Redness 15.2%, Allergy disease 7.0%, Cataract 4.1%. The medicines were according to Eye Drop 76.7%, eye Ointment 12.6%, Capsules of 2.0%, Syrups 0.2.%.Types of drug given to patients were Antibiotics 80 patients, Antiallergy 45 patients, NASID 56 patients, Vitamins 46 patients.

Conclusion: The study concludes with overall impression of rational prescription at maximum places. Drug information services including side effects and drug interaction for professionals and consumer at the hospital are highly desirable. The Ophthalmologists at the selected institute and this is evident by the low generic prescribing, frequency of administration and duration in many prescriptions.

Key Word: Drug utilization, Drug use indicator, Ophthalmological medicines, Ophthalmology Outpatient.

I. INTRODUCTION

Drug utilization studies are powerful exploratory tools to ascertain the role of drugs in the society. Drug application exploration was defined by the World Health Organization(WHO) as marketing, distribution, tradition and use of medicines in a society with unique emphasis on the resulting social, medical and economic consequences. Drug therapy is a major factor of patient care management in health care settings. Antibiotics are completely defined for various ophthalmic diseases. the present study was undertaken with the aim to investigate drug utilization and prescribing practices of ophthalmologists with emphasis on antimicrobial utilization in a Secondary and Tertiary care teaching hospitals in Dharmapuri. So, Drug utilization pattern needs to be studied precisely to increase remedial efficacity, drop side goods and also to assess the rationality of drug tradition. preliminarily, onlya manystudy was conducted to study medicine use pattern in Ophthalmology in India. thus, the present study was conducted to study the medicine use in Ophthalmology.

ABOUT DRUG UTILIZATION:

Drug utilization research is an important branch of Pharmacoepidemiology as it elucidates the scope, character and determinants of drug exposure. the World Health Organization (WHO)in

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1997 defined Drug utilization as the Prescribing, Allotment, Selling and use of drugs in a civilization, among a particular target the Medical, Social, and Economic consequence resulted. The awareness of drug utilization studies starts in the early 1960s

BENEFITS OF DRUG UTILIZATION:

The Main Principal of DU Research is to promote the coherent use of drugs in individuals. For the individual patient, the coherent use of a drug indicates the prescription of a well-recognized drug at an ideal dose, along with the accurate data.

II. MATERIALS AND METHODS

STUDY SITE

The Study was carried out in Outpatient department of Ophthalmologyin Secondary and Tertiary care hospitals in Dharmapuri, around11 Hospitals for our statistical evaluation.

STUDY DESIGN

Retrospective Study

DURATION OF STUDY

The Duration of Study is 6 months (June - November 2022).

SAMPLE SIZE

340 Patients

CONSENT FORM FROM HOSPITAL AUTHORITY

It is customary that every project work carried out is to be informed to all the Physicians, Surgeons, and other healthcare professionals of the hospital for the approval.

PATIENT SELECTION:

➢ **PATIENT INCLUSION CRITERIA**

The study includes,

- Both genders.
- Outpatient at the ophthalmology during study period.
- Patient with other co-morbid condition.
- Patients with in 1year and above.

➢ **PATIENT EXCLUSION CRITERIA**

The study excludes,

- Surgery patients
- Patients in other departmental of the hospital
- Patients below 18years

STUDY PROCEDURE

The study was conducted by,

1) Collection of prescriptions
2) Recording the details from the prescription to the PROFORMA
3) Analyzing the prescriptions

DATA COLLECTION

The Prescriptions were collected from the General Medicine, Pediatrics, Intensive care unit Department in Hospitals, for a period of 6 Months from (June 2022 to November 2022) of all the Ophthalmic Hospitals in Dharmapuri. Data collection was done by random method.

DATA ANALYSIS

Collected data from the prescription were entered into the corresponding tables and the data were analyzed.

STATISTICAL ANALYSIS:

- The data where be statistically analyzed by using SPSS.
- Data was entered and analyzed by using Microsoft excel 2007. The value was expressed as actual numbers, percentage and average

III. RESULTS AND DISCUSSION

PATIENT ACCORDING TO THE GENDER WISE

Among the whole 340 patients, of all the hospital data's, 185 patients were male, and 155 were female of Dharmapuriand surrounding villages. The data were presented in Table: 1 and Figure: 1.

TABLE 1: Patient according to the gender wise

Gender	Number of Patients in hospital wise		Total	Percentage %
	Secondary	Tertiary		
Male	108	77	185	54%

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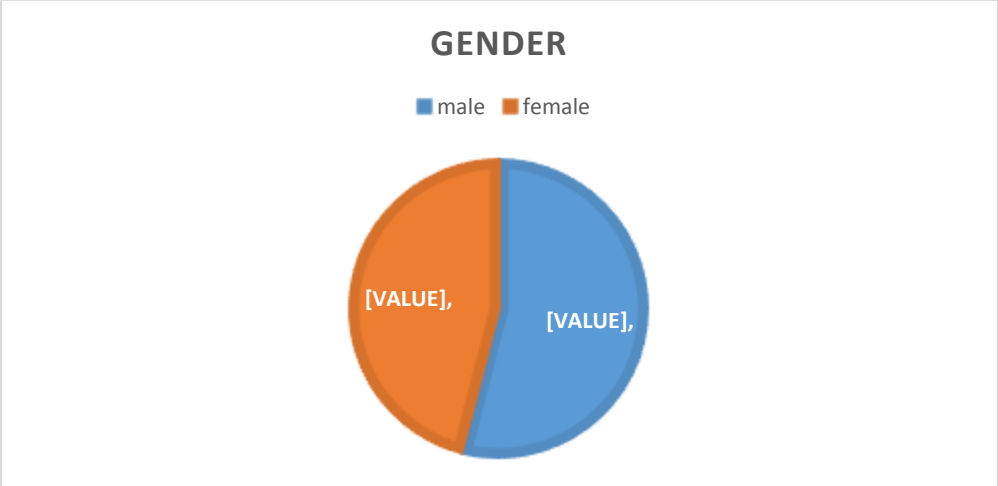
Female	81	74	155	46%
Total	189	151	340	100%

Figure 1: Patient according to the gender wise



PATIENT ACCORDING TO THEIR AGE WISE DISTRIBUTION

Among the whole patient age wise are categories as 1-25 age as 47 patients, 25-50 age as 107 patients, 50-75 age as 99 patients, above 75age as 87 patients. The data were presented in Table: 2 and Figure: 2

TABLE 2: Patient according to their age wise distribution

Age wise	**Patients according to Hospital Wise**		**Total**	**Percentage (%)**
	Secondary	**Tertiary**		
1-25	28	19	47	14%
25-50	60	47	107	31.4%
50-75	43	56	99	29.1%
Above 75 ages	58	29	87	25.5%

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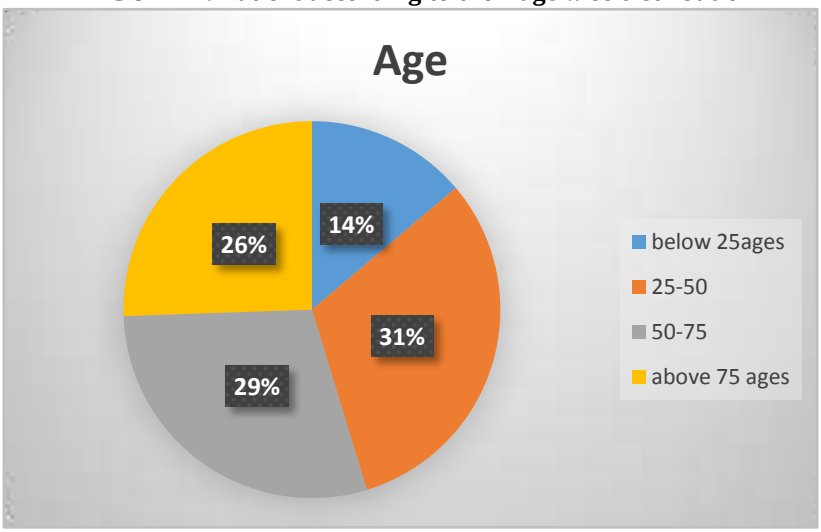
FIGURE 2: Patient according to their age wise distribution



BASED ON NUMBER OF DRUGS PER-PERSCRIPTION

In this study three hundred forty prescription (N=340) was analyzed and the total number of drug products prescribed. Number ofdrugs prescribed per prescription contain One drugs 157 (46.1%) followed by Two drugs 110 (32.3%), Three drugs 39 (11.4%), Four drugs 18 (55.2%), Five drugs 10 (2.9%), and Six drugs 6 (1.7%). Number of drugs prescribed per prescription contain three drugs were high and six drugs were less.

The Data were presented in Table: 3 and Figure:

TABLE 3: Based on number of drugs per prescription

No of drugs Per Prescription	Hospital wise		Total	Percentage (%)
	Secondary	Tertiary		
One drug	81	76	157	46.1%
Two drugs	73	37	110	32.3%
Three drugs	15	24	39	11.4%
Four drugs	10	8	18	5.2%
Five drugs	6	4	10	2.9%
Six drugs	4	2	6	1.7%
Total	189	151	340	100%

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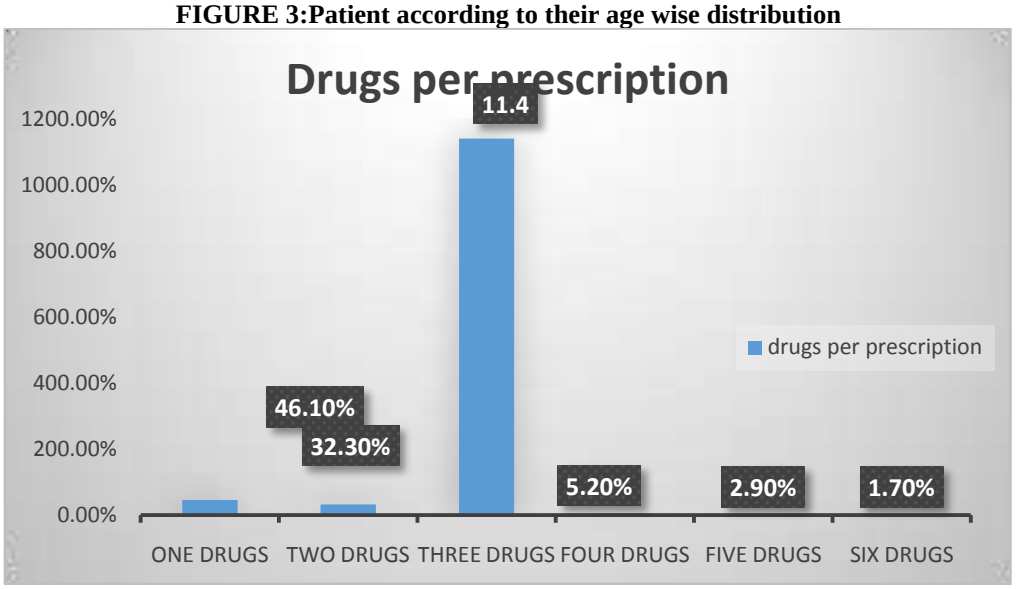
FIGURE 3:Patient according to their age wise distribution



DISEASES CONDITIONS / EYE PROBLEM WISE PERCENTAGE DISTRIBUTION OF PATIENTS

Disease condition on eye problem on hospital wise Redness 52(15.2%), Glaucoma 39(11.4%), It ching21(6.1%),Allergy24(7.0%),Cataract14(4.1%), Dryeye15(4.4%),Conjunctivitis15(4.4%),Watering 27(9%),Trauma15(4.4%),Cornealulcer11(3.2%),Retinalpathology16(5%)Foreignbodysensation48(14.1%),Floaters17(5%),Cellulitis8(2.3%),Tearglandblock4(1.1%),Pseudophakia7(2.0%) and surgery7(2.0%).

The data were presented in Table: 4 and Figure: 4

TABLE:4 Diseases condition /Eye Problem wise percentage distribution of Patients

Disease Condition	Hospital Wise		Total	Percentage %
	Secondary	Tertiary		
Redness	29	23	52	15.2%
Glaucoma	23	16	39	11.4%
Itching	13	8	21	6.1%
Allergy	14	10	24	7.0%

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Cataract	9	5	14	4.1%
Dry eye	9	6	15	4.4%
Conjunctivitis	8	7	15	4.4%
Watering	19	8	27	8%
Trauma	8	7	15	4.4%
Corneal ulcer	6	5	11	3.2%
Retinal pathology	8	8	16	5%
Foreign body sensation	21	27	48	14.1%
Floaters	9	8	17	5%
Cellulitis	4	4	8	2.3%
Tear gland block	3	1	4	1.1%
Pseudophakia	4	3	7	2.0%
Post-surgery	2	5	7	2.0%

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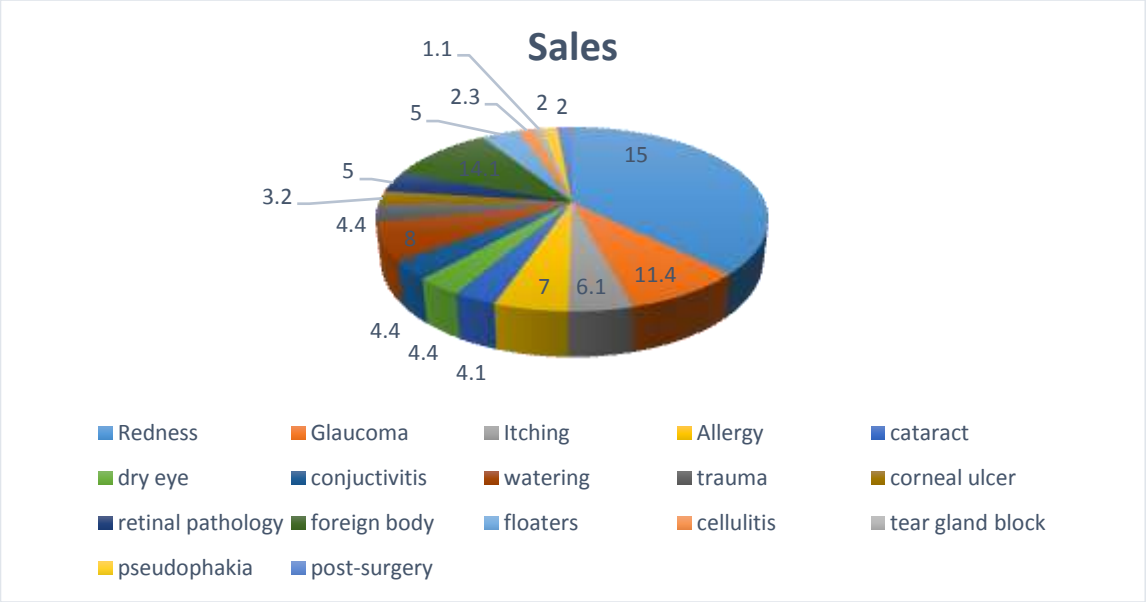
FIGURE 4 Diseases condition /Eye problem wise percentage distribution of patients



DISTRIBUTION OF TOTAL PRESCRIBED DRUGS ACCORDING TO THE DOSAGE FORM

Drugs were prescribed in five different dosage forms. Eye drops were the most commonly prescribed Dosage form261(76.7%),EyeOintment43(12.6%),Tablet28(8.2%), Capsule7(2.0%), and Syrup1(0.2%). Eye Drop were the most commonly prescribed dosage formulation while Syrup data were the least commonly prescribed dosage form.

The data were presented in Table: 5 and Figure: 5

TABLE :5 Distribution of total prescribed drugs according to the dosage form

Dosage form	Hospital Wise		Total	Percentage (%)
	Secondary	Tertiary		
Eye Drops	127	134	261	76.7%
Eye Ointment	31	12	43	12.6%
Tablet	24	4	28	8.2%
Capsule	6	1	7	2.0%
Syrup	1	0	1	0.2%

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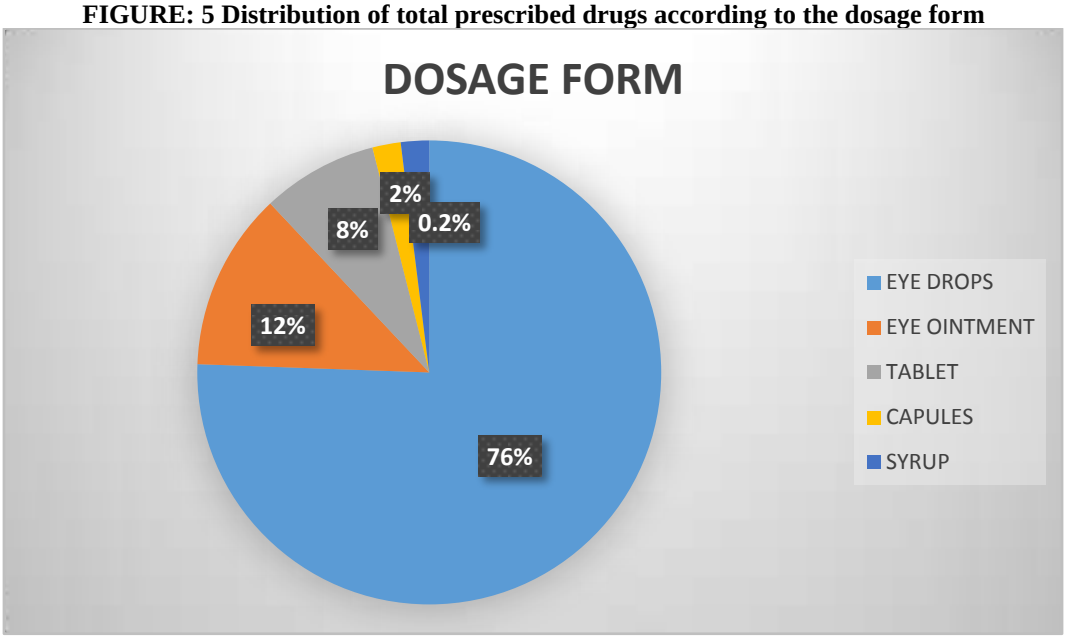
FIGURE: 5 Distribution of total prescribed drugs according to the dosage form



DURATION WISE DISTRIBUTION DRUGS (n=340)

Duration wise distribution of drugs in One day98(28.8%), Two days74 (21.7%),Three days 55(16.1%),Four days50(14.7%) and Five days40(11.7%).

The data were presented in Table: 6 and Figure: 6

TABLE:6 Duration wise distribution

Duration (days)	Number of Patients in Hospital Wise		Total	Percentage %
	Secondary	Tertiary		
One day	51	47	98	28.8%
Two days	38	36	74	21.7%
Three days	34	21	55	16.1%
Four days	31	19	50	14.7%
Five days	23	17	40	11.7%
Six days	12	11	23	6.7%

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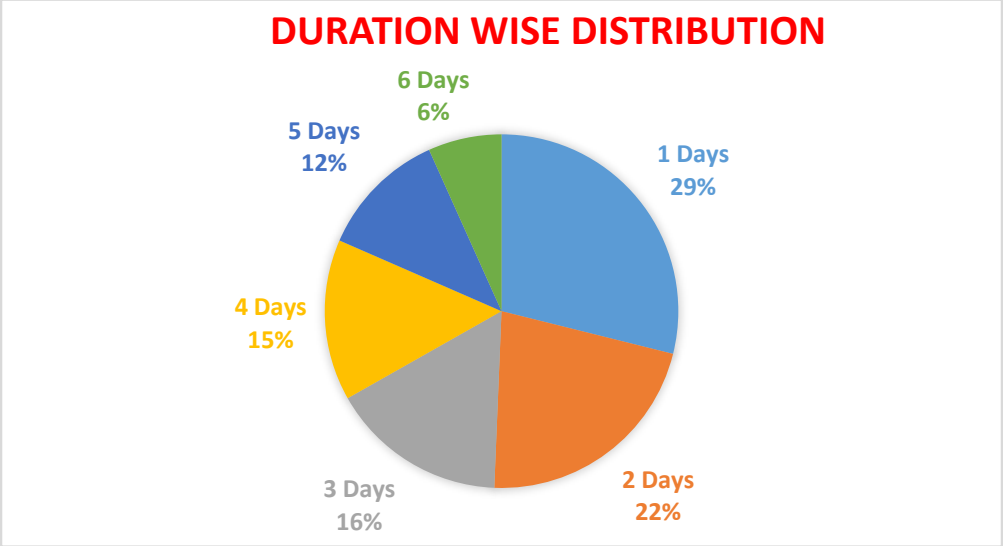
FIGURE :6 Duration wise distribution



DIFFERENT TYPES OF DRUG PRODUCTS PRESCRIBED

Different types of drugs products prescribed in secondary and tertiary care hospital wiseAntibiotic80(23.5%),Antiallergy45(13.2%),Ocular(lubricant)27(8%),NSAID56(16.4%),Antimicrobial15(4.4%),Vitamins46(13.5%)and Mydratics18(5.2%),Anti Glaucomadrug 24(7.0%)Artificial tear 29(8.5%).

The data were presented in Table: 7 and Figure: 7

TABLE :7 Different types of drug product prescribed

Type of drugs	Hospital Wise		Total	Percentage
	Secondary	Tertiary		
Anti-biotic	39	41	80	23.5%
Antiallergy	25	20	45	13.2%
Ocular (lubricant)	19	8	27	8%
NASID	33	23	56	16.4%
Antimicrobial	11	4	15	4.4%

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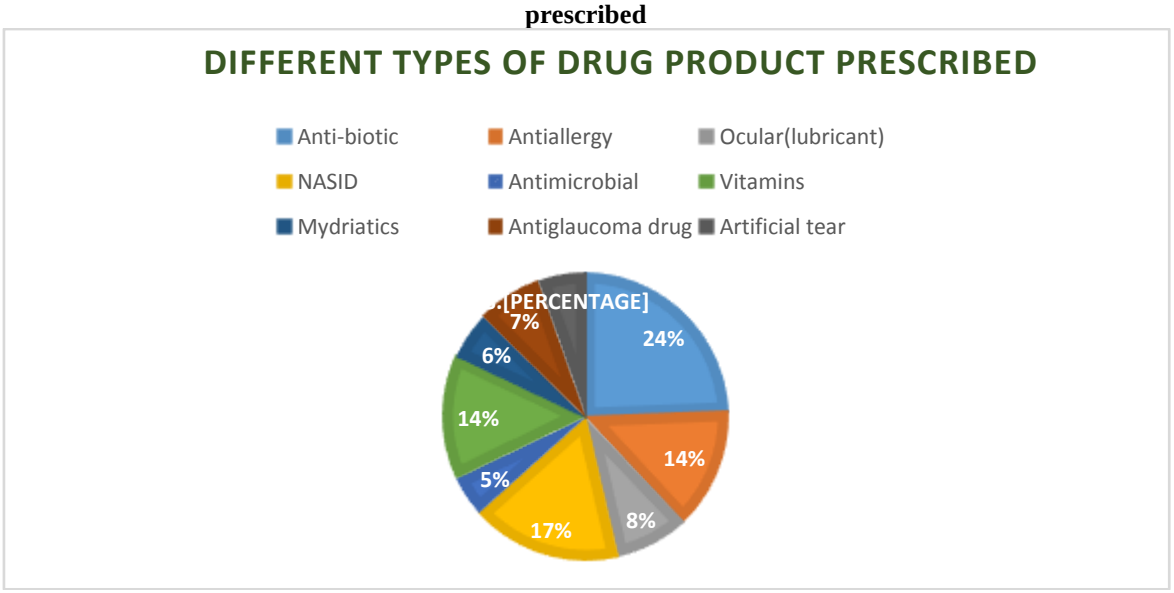
Vitamins	25	21	46	13.5%
Mydriatics	10	8	18	5.2%
Antiglaucoma drug	9	15	24	7.0%
Artificial tear	18	11	29	8.5%

FIGURE:7 Different types of drug product prescribed FIGURE:7 Different types of drug product prescribed



PRESCRIBING FREQUENCY OF ANTI MICROBIAL DRUGS CLASS

Prescribing frequency of Antimicrobial drug classes of Fluoroquinolone 73(21.4%), Penicillin 33(10%), Tetracycline 69(20.2%), Chloramphenicol115 (34%), Macrolides4(1.1%), Aminoglycoside 14(4.1%),Polypeptide & Other32(9.4%).

The data were presented in Table: 8 and Figure: 8

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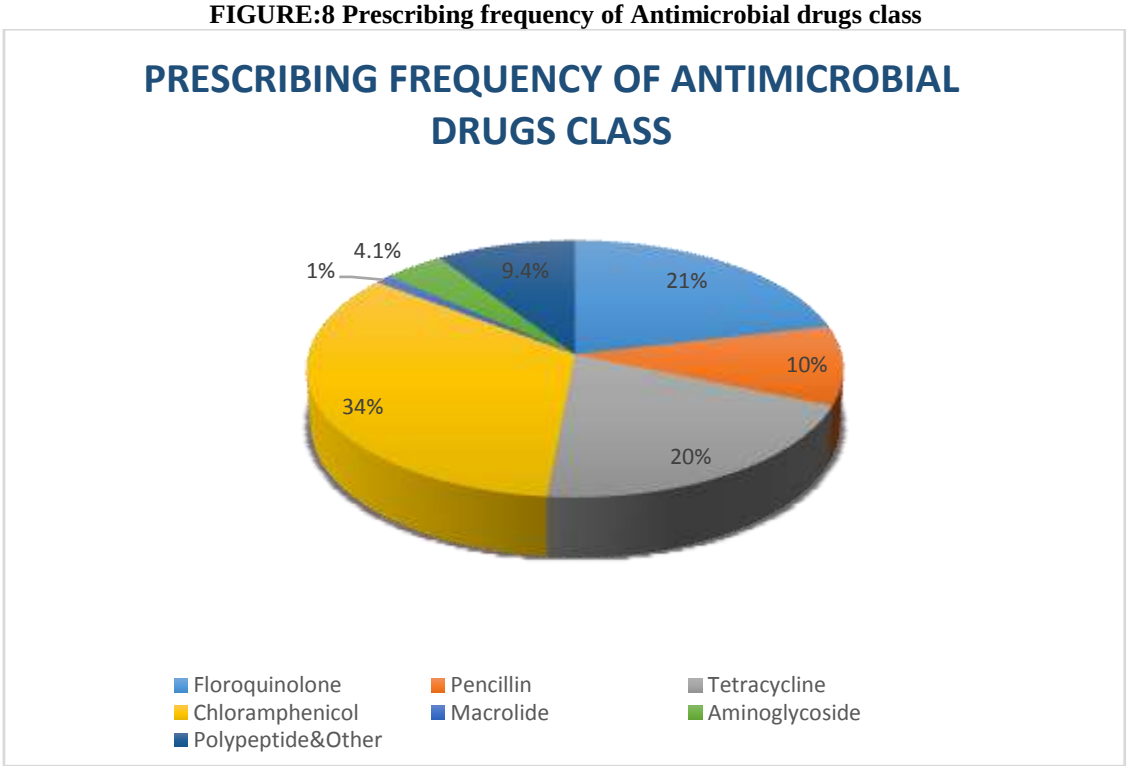
TABLE:8 Prescribing frequency of antimicrobial drugs class

Antimicrobial class	Hospital Wise		Total	Percentage
	Secondary	Tertiary		
Fluoroquinolone	42	31	73	21.4%
Penicillin	21	12	33	10%
Macrolide	4	0	4	1.1%
Aminoglycoside	12	2	14	4.1%
Polypeptide &Other	19	13	32	9.4%
Tetracycline	37	32	69	20.2%
Chloramphenicol	57	61	115	34

FIGURE:8 Prescribing frequency of Antimicrobial drugs class



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IV. CONCLUSION:

This is experimental study exhausted out-patient department of ophthalmology hospitals in and around Dharmapuri district areas. The study population was 340 patients and study of drug prescription pattern. The study concludes with overall impression of rational prescription at maximum places. drugs play a very important role in rising human health and in promoting successfulness to supply the specified impact, they have to be safe and efficacious and need to be use rationally. Drug data services as well as facet effects and drug interaction for professionals and consumer at the hospital are highly desirable.

Drug prescriptions kind a very vital purpose of contact between the doctors and therefore the patients. However, to obtain a needed impact drug should be used rationally and must be accessible, affordable, safe, and efficacious for users. In recent years, inappropriate, ineffective, and irrational use of drugs has been normally determined in health care facilities, especially in developing countries. Hence, it becomes essential to push acceptable use of drugs in the health care system. to promote rational use of drugs in developing countries, the ophthalmologists at the selected institute and this can be evident by the low generic prescribing, frequency of administration and period in several prescriptions.

Drugs play a key role in the health care system as they improve human health and promote well-being. However, to obtain a required result drug must be used rationally and must be obtainable, affordable, safe, and efficacious for users. In recent years, inappropriate, ineffective, and irrational use of drugs has been ordinarily determined in health care facilities, especially in developing country.

REFERENCE

[1]. Azari AA, Arabi A. Conjunctivitis: A systematic review. J Ophthalmic Vis Res. 2020;15(3):372-95. doi: 10.18502/jov.v15i3.7456, PMID 32864068.

[2]. World Health Organization Model List of Essential Medicines, 21st List. Geneva: World Health Organization; 2019.

[3]. National List of essential medicines of India (NLEM). Government of India, Ministry of Health and Family Welfare (MoHFW); 2015

[4]. Shankar P.R., Upadhyay D.K., Subish P., et al. Drug utilisation among older inpatients in a teaching hospital in Western Nepal. Singapore Med J. 2010; 51(1): 28.

[5]. Krishnaswamy K, Kumar BD, Radhaiah G. A drug survey – precepts and practices. Eur J Clin Pharmacol 1985;29(3):363-70.

[6]. Sharma D, Reeta K, Badyal DK, Garg SK, Bhargava VK. Antimicrobial prescribing pattern in an Indian tertiary hospital. Indian J Physiol Pharmacol 1998;42(4):533-7.

[7]. Gangwar A, Singh R, Singh S, Sharma BD. Pharmacoepidemiology of drugs utilized in ophthalmic outpatient and inpatient department of a tertiary care hospital. J Appl Pharm Sci 2011;1;135-40.

[8]. World Health Organization - Introduction to Drug Utilization Research. Geneva: WHO, 2003: 6-48.

[9]. P. A. Asbell, K. A. Colby, S. Deng et al., "Ocular TRUST: nationwide antimicrobial susceptibility patterns in ocular isolates," American Journal of Ophthalmology, vol. 145, no. 6, pp. 951–958, 2008.

[10]. Hasmnis AA, Patil SS, Narayan KA, Rashid AK and Mohanty BK. Drug utilization study for acute illnesses in village Bangor, Malaysia; The findings of a household survey. AL Ameen J Med Sci; 2010; 3(2):165-168.

[11]. Government of Nepal, ministry of health, department of drug administration, national list of essential medicines Nepal (fifth revision) 2016; 1-37 (Final NLEM 2016.pdf).

[12]. Singh J, iswas NR, Jain JS, and Das GK (1998), prescribing trends in ophthalmology. The Indian Journal of Clinical Pharmacology and Therapeutics, 18: 79-82.

[13]. The Government of India, Ministry of Health & Family Welfare (MOHFW), "National Formulary of India," 2011, http://www .cdsco.nic.in/NFI 2011.pdf.

[14]. Central Drugs Standard Control Organization, "National Formulary of India," 2011, http://cdsco.nic.in/National%20List%20of%20Essential%20Medicine%20final%20copy.pdf.