A Study on The Evaluation of Prescribing Pattern of Drugs in The Outpatient Department of Paediatrics in A Tertiary Care Teaching Hospital

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ABSTRACT

The use of medicine among children is different from adult due to several reasons like lack of data on pharmacokinetics, pharmacodynamics, efficacy and safety, different physiological spectrums among age groups. Infants and children frequently get non-serious diseases. A correct diagnosis and the best course of therapy, which typically entails a pharmaceutical regimen, are the foundations of effective medical care for pediatric patients. The study's goal is to determine the disease patterns and prescription prescribing patterns for pediatrics outpatient services (OPD) patients at a tertiary care hospital. A total of 100 prescriptions were collected and analyzed. The average number of drugs per prescription was 4.24. the infectious and parasitic disease was the most common reason for attending the paediatrics outpatient department (44%) followed by diseases of respiratory system 23 % and diseases of GIT 18%. Diseases of cardiovascular system were 4%, skin and subcutaneous tissue were 4% and the central nervous system was 2%. Others miscellaneous diagnoses were 5%. The most common drug groups prescribed were NSAIDs (20.28%) followed by antihistamines (18.16%). Appropriate drug utilization studies have been found to evaluate whether drugs are properly used and utilized.

INTRODUCTION

Studies of prescription patterns are effective exploratory techniques for determining the place of medicines in society. Prescriptions in a tertiary care setting are anticipated to be prudent, appropriate, safe, efficient, and cost-effective. Particularly, in the economically growing nations, achieving logical and efficient medical treatment is the goal. Considering these facts, this study will examine the pattern of prescriptions given to pediatric patients in a tertiary care hospital. The area of medicine known as pediatrics focuses on the growth, illnesses, and problems that affect children. In a hospital context, drug therapy is regarded as a key component of paediatric management. A precise diagnosis and the best course of therapy, which typically entails a pharmaceutical regimen, are the cornerstones of effective medical care for a paediatric patient. The epidemiological assessment of adult medication use is currently a highly visible topic, whereas research on drug prescribing for pediatric patients has been scarce. The development of deliberate drug therapy strategies is necessary to meet the demand for safe and efficient medicines for usage in neonates, infants, children, and adolescents. In order to make medical care sensible and effective, the research of prescribing patterns aims to monitor, assess, and, if necessary, advise improvements in prescribing procedures. The evaluation of drug use is crucial for clinical, educational, and financial reasons. The study's emphasis is on providing pediatric patients with effective medical care by making an accurate diagnosis, choosing the right drug regimens, avoiding the overuse of antibiotics, and reducing prescription errors.

Children are a large proportion of the population in many developing nations, which highlights the significance of their health. They require special care since they are highly susceptible to many infectious and communicable diseases, and their mortality rate is typically very high. When writing a prescription for a child, it is important to consider both the child's current developmental stage and the disease's aetiopathogenesis. There are two types of prescriptions: rational and non-rational. The latter may result in negative drug reactions, more frequent drug-drug interactions, and higher healthcare expenses. Adverse effects on children can increase morbidity and mortality because their immune systems are immature and they cannot communicate adequately. Regular review of prescriptions is essential to detect various irrational prescriptions such as polypharmacy, irrational use of antimicrobials and injections. It is also necessary to describe trends and monitor the performance of various treatments. Irrational use of medications has been identified as a

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major problem in many pediatric prescribing studies; this can lead to antimicrobial resistance, treatment failure, and increased healthcare costs.

MATERIALS AND METHODS

This prospective, observational study was conducted for a period of three months from May 2023 to July 2023 in pediatrics outpatient departments of Navodaya Medical College Hospital & Research Centre (NMCH & RC) Raichur. Permission was obtained from the Institutional Ethics Committee of Navodaya Medical College Hospital and Research Centre.

This study was carried out among 100 study participants from the outpatient department of pediatrics and the data was collected using case files and data entry forms.

RESULTS AND DISCUSSION

A total 100 cases were taken from the department of paediatrics, in which a total of 424 drugs were prescribed. Therefore, average number of drugs prescribed per patient was found to be 4.24.

Table 1: Demographic profile of patients

Age distribution	Number	percentage
1 month- 1 year	31	31%
1-5 years	47	47%
5-12 years	22	22%
Sex distribution	**Number**	**percentage**
Male	58	58%
female	42	42%

Gender analysis revealed that male patients were more in number (58%) compared to females (42%). About age, 47% of patients were in the age group of 1-5 years while 31% patients were in the age group 1 month- 1 year and 22% patients were in the age group of 5-12 years. (Table 1)

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Table 2: Prescription profile

	Parameters	Number (%)
1	Drugs were prescribed by generic name	11 (2.53%)
2	Fixed dose combinations used	34 (8.01%)
3	More than 1 antibiotic prescribed in	25 (5.89%)
4	Follow-up advice was written in	47 (47%)
5	Referral	6 (6%)
6	Basic information of patient written (Name, Age, sex, Address)	97 (97%)
7	Complete diagnosis written	92 (92%)
8	Legibility	89 (89%)
9	Complete prescription in terms of dose, route, strength, frequency, and dosage forms	81 (81%)

Drugs were prescribed by generic names only in 2.53% of cases. Fixed dose combinations were used in 8.01% of cases. More than one antibiotic was prescribed in 5.89% cases. Basic information of patient (Name, age, sex, and complete address) was written in 97% of prescriptions. Only 89% prescriptions were legible and only 81% prescriptions were complete in terms of dose, route, strength, frequency, and dosage forms. (Table 2)

Table 3: Drug profiles

	Parameters	Number of drugs (%)
1	Drugs on EDL	72 (16.9%)
2	FDC used	34 (8.01%)
3	Dosage forms	
a)	Oral	245 (57.7%)
b)	Injectables	160 (37.7 %)
c)	topical	19 (4.48%)

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Drugs on EDL are only 16.9% and fixed-dose combinations are 8.01% of total drugs. Regarding dosage forms, it was found that oral drugs were prescribed in 57.7% of prescriptions, injectables in 37.7% and topical in 4.48% prescriptions. (Table 3)

Table 4: Disease pattern and diagnosis pattern

	Disease pattern	Number of prescriptions (%)
1	Respiratory system	23 (23%)
2	Infectious and parasitic	44 (44%)
3	GIT	18 (18%)
4	CNS	02 (2%)
5	CVS	04 (4%)
6	Skin and subcutaneous tissue	04 (4%)
7	Others	05 (5%)
	Diagnosis pattern	**Number of prescriptions (%)**
1	Diagnosed with 1 disease	81 (81%)
2	Diagnosed with 2 diseases	19 (19%)
3	Diagnosed with 3 diseases	00

Infectious and parasitic diseases were the maximum (44%) followed by diseases of the respiratory system (23 %) and diseases of GIT (18%). Diseases of cardiovascular system were 4%, skin and subcutaneous tissue were 4% and the central nervous system were 2%. Other miscellaneous diagnoses were 5%. (Table 4)

81% patients were diagnosed with 1 disease and 19% patients were diagnosed with 2 diseases. (Table 4)

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Table 5: Common categories of drugs prescribed

	Category of drug	Number of drugs (%)
1	NSAIDs	86 (20.28%)
2	Antibiotics	74 (17.45%)
3	GIT/anti-ulcer drugs	42 (9.90%)
4	Cardiovascular drugs	08 (1.88%)
5	CNS drugs	04 (0.94%)
6	Antihistamines	77 (18.16%)
7	Multivitamins, minerals, and enzymes	68 (16.03%)
8	Expectorants and bronchodilators	65 (15.33%)

The most common drug groups prescribed were NSAIDs; antihistamines; antibiotics; multivitamins, minerals, and enzymes; expectorants and bronchodilators; GIT/antiulcer drugs, and cardiovascular drugs. (Table 5)

Table 6: Number of drugs prescribed per prescription- polypharmacy

Number of drugs	Number of prescriptions (%)
1	03 (3%)
2	09 (9%)
3	21 (21%)
4	36 (18%)
5	18 (36%)
6	12 (12%)
More than 7	01 (1%)

The incidence of polypharmacy was very common with the maximum number of drugs prescribed per prescription being 7. (Table 6)

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Table 7: Problems observed in prescription

	Problem description	Number of prescriptions (%)
1	Final diagnosis not written	09 (9%)
2	Sex not written	02 (2%)
3	Age not written	01 (1%)
4	Date not written	02 (2%)
5	OPD number absent	05 (5%)
6	Signature of doctor absent	06 (6%)
7	total	25 (25%)

it was observed that the final diagnosis was not written in 9% of the cases, signature of the doctor was absent in 6% of the cases, OPD no. was absent in 5% of the cases, sex of the patient is not written in 2% of the cases and age not written in 1% of the cases.

CONCLUSION

The results of the current study indicate that the hospital's prescription practices have a great deal of room for improvement. There is a pressing demand for generic prescribing. An action plan must be created in order to change the current prescribing practices. This can be done by giving doctors access to the Standard Treatment Guidelines, the EDL, and the Antibiotic Policy, or by implementing information, education, and communication (IEC) interventions.

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CONFLICT OF INTEREST

The author declares no conflict of interest.

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