



ASSESSMENT OF PRESCRIBING PATTERN WITH WORLD HEALTH ORGANIZATION PRESCRIBING INDICATORS IN OUTPATIENT DEPARTMENTS OF A TERTIARY TEACHING HOSPITAL IN EASTERN INDIA: A CROSS SECTIONAL STUDY

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ABSTRACT

Objective: Scientific and rational prescription is essential as far as safety and efficacy are concerned. Thus prescription writing is an important part of medical treatment. Prescription audit is thus needed to regulate and overview the quality of prescriptions. Present study aimed to evaluate the quality of prescription of Out Patient Departments (OPDs) of a tertiary care hospital, following standard parameters. **Methods:** This was a cross-sectional, observational study conducted with prior permission from administration as well as Institutional Ethical Committee. A total of 100 prescriptions from different Out Patient Departments (OPDs) of a medical college were collected for two days and then evaluated. **Results:** Present study observed 100% of the prescriptions contained identification of health facility, prescribers and patients. Signature of prescriber and date in prescriptions were evident in all the prescriptions. 93% of the drugs were prescribed by generic name and Fixed Dose Combination (FDC) was prescribed in 22% of the cases. All the prescriptions contained abbreviations. The average number of drugs prescribed per prescription was 2.9. Number of antibiotic per prescription was 0.05. 90% drugs were prescribed from Essential Drug List (EDL). **Conclusion:** It was observed that the prescription quality of OPD of the health facility was good. However, use of abbreviations in prescription must be reduced. Prescription audits must be conducted at regular interval, in order to improve the quality of treatment.

KEYWORDS: Audit, Drugs, Fixed Dose Combination, Outpatient Department, Prescription.

INTRODUCTION

A prescription is a health-care program implemented by a physician or other qualified healthcare practitioner in the form of instructions that govern the plan of care for an individual patient.^[1] The prescription order is an important transaction between the doctor and the patient.^[2] The prescribing behaviour of physician depends upon the input from various sources like patients, professional colleagues, academic literatures, commercial publicity and Government regulations.^[3] Prescribing errors are generally the output of error in these sources. Irrational use of drugs is one of the major problem which is faced by healthcare providers and administrators of many country.^[4]

According to World Health Organization (WHO), "Rational use of drugs requires that patients receive medications appropriate to their clinical needs, in doses that meet their own individual requirements for an adequate period of time, at the lowest cost to them and their community".^[5] Worldwide, it is estimated that over

half of all medicines are prescribed, dispensed or sold inappropriately.^[6]

Irrational use of medicine is a global problem. It is a commonly observed practice that occurs in both developed and developing countries, with enormous costs from the perspectives of the scarce resources and adverse clinical consequences. It may occur in different forms; misuse, overuse, polypharmacy, adverse drug events or drug-drug interactions.^[7]

Assessment of drug use patterns with the WHO drug use indicators is becoming increasingly necessary to promote rational drug use in developing countries.^[8,9] An 'audit' is defined as 'the review and the evaluation of the health care procedures and documentation for the purpose of comparing the quality of care which is provided, with the accepted standards'.^[10] Prescription audit is that part of the medical audit which seeks to monitor, evaluate and if necessary, suggest modifications in the prescribing practices of medical practitioners, so as to make the medical care rational and cost effective.^[11] WHO drug

use indicators are qualitative indicators now widely accepted as a global standard for problem identification.^[12]

Though there are many studies on prescription evaluation in other countries, very few information are available from India specifically from the eastern region. Current study aimed to evaluate the prescribing trend in a tertiary medical teaching institution of eastern India using the WHO drug use indicators.^[13]

MATERIALS AND METHODS

The study was conducted in the outpatient departments of Medicine, Surgery, Orthopedics, Gynaecology, Paediatrics for two days (15th & 16th June, 2017) of a tertiary care teaching hospital of West Bengal, India. It was an observational and cross-sectional study where 100 prescriptions were collected randomly selected from OPD for this study. This study was initiated after clearance from Institutional Ethics Committee. A specially designed semi-structured, pretested 'PRESCRIPTION AUDIT CHECK LIST' used to collect the data from each prescription. Statistical analysis was done using Microsoft® Excel®.

RESULT

Total 100 prescriptions were collected from OPD of different departments of the tertiary care teaching

hospital. The department wise distribution of prescription was shown in fig 1.

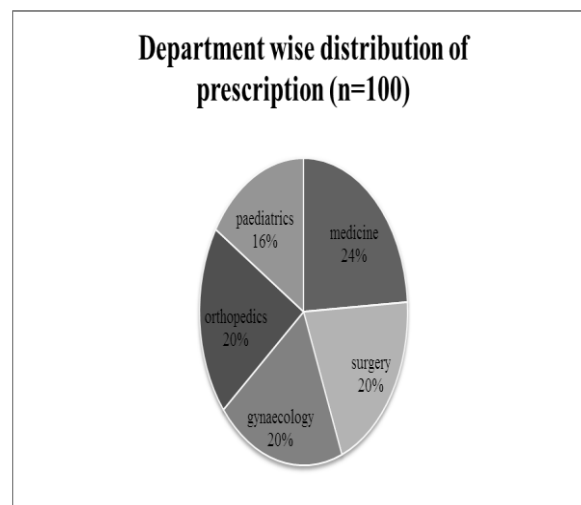


Figure 1: Distribution of OPD prescription (n=100) according to departments.

20 (20%) prescriptions were collected from each of the departments of Surgery, Gynecology and Orthopedics, 24 (24%) collected from the department of Medicine and 16 (16%) from department of Paediatrics (Fig 1).

Table 1. Prescription with identification (n=100).

SI No	Prescription with identification	Number (Yes)	Percentage (%)	Number (No)	Percentage (%)
1	Identification of the health facility	100	100	0	0
2	Prescribers identification	100	100	0	0
3	Patient identification	100	100	0	0
4	Signature of the Prescriber	100	100	0	0
5	Date of the Prescription	100	100	0	0

Identification of health facility was obtained in all 100 prescriptions (Table 1). Identification of the prescriber was also 100% of the prescriptions. This was an

important observation. Identification of prescription is a medico-legal issue. Patient identification and date was also provided in all (100%) of the prescription.

Table 2. Prescription details (n=100).

SI No	Prescription details	Yes		No	
		Frequency	Percentage	Frequency	Percentage
1.	Legibility of the Prescription	100	100	0	0
2.	Prescription with findings and/or signs and symptoms	98	98	2	2
3.	Prescription with Provisional diagnosis and/or differential diagnosis and/or Final Diagnosis	66	66	34	34
4.	Prescription with abbreviations-	100	100	0	0
	A) 1-3 abbreviations	26	26	74	74
	B) > 3 abbreviations	74	74	26	26

All the prescriptions were legible. Signs, symptoms and finding of the disease were mentioned in 98% of the prescriptions. Diagnosis was detailed in 66% of the

prescriptions. 74% of prescriptions contained more than 3 abbreviations (Table 2).

Table 3. Drug related parameters (n=100).

Sl No	Drug related parameters	Yes		No	
		Frequency	Percentage	Frequency	Percentage
1.	Selection of core drugs	98	98	2	2
2.	Generic Prescription	93	93	7	7
3.	Proper therapeutic dose	100	100	0	0
4.	Appropriate frequency of administration	100	100	0	0
5.	Appropriate Duration of therapy	100	100	0	0
6.	FDC prescribed	22	22	78	78

98% and 100% prescriptions, respectively reported appropriate selection of core drugs and subsidiary / symptomatic drugs (Table 3). This is an important indicator. Relevant advices/instructions for patients were provided in only 98% of the prescriptions. Drugs were written in generic name in 93% prescriptions, a

parameter as per WHO. All (100%) prescriptions were complying with proper dosage form (formulation), therapeutic dose, appropriate frequency of administration and appropriate duration of therapy. Fixed Dose Combination (FDC) was prescribed in 22% of the prescriptions.

Table 4. WHO 'Core Drug Use Indicators' in the prescriptions (n=100).

Sl. No.	WHO Core Drug Use Indicator Parameters	Number/Percentage
1.	Number of Drug per Prescription	2.9
2.	Number antibiotic per prescription	0.41
3.	Number Injection per prescription	0.05
4.	% of drug prescribe from EDL	90%
5.	% of prescriptions containing Generic drug	93%
6.	% of prescriptions containing drug from EDL	97%

Total number of drugs prescribed was 290. In the present study, it was found that 41 antibiotics were prescribed in total. However, only 5 injections were prescribed. It was observed that 261 out of 290 drugs taken from Essential Drug List (EDL). This is a good international indicator. 7 prescriptions were written in local language. The average number of drugs prescribed per prescription is an indication of the level of polypharmacy. In the present study, this was accounted as 2.9 (Table 4). Number of antibiotic per prescription was 0.05. 90% drugs were prescribed from EDL.

DISCUSSION

Prescription is a written recommendations provided by the clinician to the patients. Therapeutic success thus depends largely on the prescription writing. A two-day prescription audit conducted in a tertiary care teaching hospital in Kolkata, West Bengal, India, collected 100 prescriptions from OPDs of Medicine (24), Surgery (20), Gynecology (20), Orthopedics (20) and Paediatrics (16). Identification of the health facility, prescriber and patient is an essential part of a prescription. Present study observed 100% of the prescriptions contained identification health facility, identification of the prescribers and patients. A study in Punjab, India, revealed only 4.7% of the prescriptions contained prescriber's name whereas, patient identity was evident in all the prescriptions.^[14] A similar study in Sri Lanka also revealed prescriber's identity was missing in all the prescriptions.^[15] Another study in Saudi Arabia reported prescriber's and patient's identity were mentioned in 83.3% and 94.6% cases, respectively.^[16] Signature of prescriber was evident in 100% of the prescriptions of

the present study, and all the prescriptions contained date in prescription. This was much higher as compared to 58.06% and 45.16% prescriptions containing signatures and dates, respectively, in a survey in Nigeria.^[17] Present study revealed that all the prescriptions audited were legible. Similar result was obtained from the study in Nigeria.^[17] Abbreviations were used in all the prescriptions, 74% containing more than 3 abbreviations. A study in Western India reported use of abbreviations in all the prescriptions.^[18] So the present study indicated better prescription quality started.

The average number of drugs per prescription was 2.9 in the present study, which was high when compared with the WHO reference value 1.6-1.8.^[13] In a study conducted in a secondary referral hospital in South India, the index was 2.7^[19] which was close to the present study. Another study conducted in Iran showed the average number of drugs per prescription to be 3.07.^[20] In the study of drug use patterns in developing countries, the average number of drugs per encounter was high in Nigeria (3.8), low in Sudan (1.4) and in Zimbabwe (1.3).^[8] So there is scope to improve these parameters in the present study set up.

Percentage of generic drugs prescription was 93%, in the present study, when compared with WHO standard (100%)^[13] was satisfactory. In the southern part of India in a secondary referral hospital it was 42.9%.^[19] In the drug use pattern study in developing countries, the percentage of encounters in which generic drugs prescribed was low in Nigeria (48%), Sudan (63%) and relatively better in Zimbabwe (94%).^[8] It is probably due

to greater regulatory monitoring as well as governmental supply of generic medicine.

Present study showed that percentage of injectable medicine prescribed was 1.72% which was similar to the findings obtained in the previous study done in southern India 1.6%.^[19] This value was largely satisfactory because the WHO standard value is <10%.^[13] The lower value of these indices is largely due to the fact that the present study is based on OPD data where the physician follows hospital outpatient medicine list which contains a small number of injectable drugs.

Percentage of drugs prescribed from EDL was found to be 90% in the present study.^[13] A study conducted in a non-governmental organizations outpatient facility in West Bengal conducted in 2000, it was found to be 45.7%.^[21] However, national level study reported 70% of the drugs were taken from EDL that is much lower as compared to the present study.^[18] The improvement in this aspect of prescribing is largely because of the effect of the governmental policy.

Percentage of antibiotic prescribed per prescriptions was 28% in the present study. WHO recommends it to be 20-26.8%.^[13] This high value may be due to the location of the study setup in tropical region environment with increased incidence of primary and secondary infection. This value is largely corroborative of the increasing antibiotic resistance. But at the same time it may be due to suspected infection as well as large free of cost governmental supply of the antibiotics to the hospital.

CONCLUSION

Overall it was observed that the prescription quality of OPD, tertiary care teaching hospital in Kolkata, was good. Identification of health facility, prescriber and patient were obtained in all the prescriptions. Use of abbreviations in prescription must be reduced through administrative and academic intervention. The present study also concluded that the percentage of injectables prescribed in the prescriptions meets the WHO standard but there is further scope of improvement in the other indices like percentage of prescriptions containing Generic drug, percentage of drugs prescribed from EDL. Regular awareness programmes about rational drug prescribing among prescriber as well as prescription auditing periodically are essential to improve the quality of prescriptions.

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