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PRESCRIPTION AUDIT OF PRESCRIBING PATTERNS IN A TERTIARY CARE HOSPITAL

Pharmaceutical Science

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ABSTRACT

Background: Prescription writing is a cornerstone of medical practice, reflecting the quality of healthcare services provided to patients. This study aimed to evaluate prescription patterns and identify areas for improvement in a tertiary care hospital using the World Health Organization (WHO) prescribing indicators. **Methods:** A total of 522 prescriptions were analysed across various departments to assess completeness and adherence to established guidelines. Key parameters included documentation of drug serial numbers, usage of abbreviations, generic prescribing, and inclusion of specific instructions. **Results:** The analysis revealed deficiencies in documenting drug serial numbers (80.6%), usage of abbreviations (82%), and lack of specific medication instructions (76.4%). While 80.7% of prescriptions used generic names, 65.8% featured legible signatures. Antibiotic prescriptions exceeded WHO recommendations, highlighting potential overuse. **Conclusion:** These results underscore the need for regular prescription audits to enhance patient safety, adherence, and overall healthcare outcomes.

KEYWORDS

Prescription audit, WHO prescribing indicators, rational drug use, patient safety, healthcare quality

INTRODUCTION

A prescription is a medico-legal document written by an authorized healthcare professional to treat the patient (5). It reflects the quality of healthcare services being provided to the patient. Prescribing errors contribute to the irrational utilization of medications, contributing to poor patient compliance. Irrational prescribing can result in ineffective and unsafe treatment, potentially leading to the worsening or prolongation of illness, unnecessary discomfort, harm to the patient, and leading to higher healthcare costs. (1,4).

The World Health Organization (WHO) identifies several key elements of prescription research, including evaluating the quality, and trend of drug utilization (9), the pattern of use of drugs with generic names, and the completeness of prescription in terms of dose, formulation, duration, frequency, etc (2). Prescription research is important for identifying gaps in prescription writing and common mistakes committed while prescribing medicines (2). These errors may arise due to the omission of certain aspects of the prescription, like not writing in the correct format, or omitting the dosage form, dose, frequency, duration of medicine, special instructions, and warnings (7). Hence it is important to understand the significance of prescription pattern analysis and its role in ensuring the safe and effective use of medicines.

Prescription audit is a part of the holistic clinical audit and is a quality improvement process that seeks to improve patient care and outcomes through systematic review of care against explicit criteria and implementing change. It is an important tool for monitoring and assessing the pharmaco-therapeutic approaches adopted by clinicians (3). The most crucial aspect of the healthcare system is ensuring that the correct medication is provided to the appropriate individuals (6). These audits help doctors make better decisions about which medicines to use and how to use them in a way that makes the therapy effective, rational, and cost-efficient (8). By engaging in such evaluative practices, medical professionals are motivated to adopt judicious, economical, and efficacious prescribing habits (4).

Furthermore, prescription auditing is a valuable educational practice that can help improve the quality of prescriptions. By consistently reviewing prescriptions, we can ensure that patients receive the best possible care. This practice helps to maintain high therapeutic standards and ensures that patients receive the right medication for their needs (10)

The present study will be conducted within a tertiary care hospital, aiming to scrutinize the prescription patterns of doctors, with the overarching objective of refining and rationalizing the healthcare.

MATERIALS & METHOD

This point prevalence survey was conducted after obtaining ethical clearance from the Institutional Ethics Committee, Gandhi Medical College, Bhopal (M.P).

The study was carried out for 1 month, including 7 days of Point prevalence survey. Prescriptions of all admitted patients and those present in the OPD during the survey were evaluated irrespective of the patient's characteristics, diagnosis, or department.

Permission to access the patients' prescriptions was obtained from the Medical Superintendent.

A total of 600 prescriptions were sampled and analyzed as per the World Health Organization (WHO) prescribing indicators (5,6):

Prescription format and its completeness concerning the following:

Doctor's Details:
- Name of the doctor
- Registration number
- Designation
- Department.

Patient Details:
- Name
- Age
- Gender
- Address and contact details
- Height
- Weight
- Chief complaints
- Comorbidities
- History of allergies
- History of previous medications

Details Of Each Drug:
- Name
- Drug serial number
- Abbreviations
- Usage of generic or brand name
- Route of drug administration
- Drug frequency
- Drug duration
- Drug taking instructions
- Medication written in capital letters
- Formulation of drug advised.

- **WHO Core Prescribing Indicators Include**:

- Average number of drugs per prescription
- Percentage of drugs prescribed by generic name
- Percentage of antibiotics per prescription
- Percentage of injections per prescription
- Vaccinations were excluded from this list
- Percentage of drugs prescribed from the Essential Drugs List.

RESULTS

A total of 522 prescriptions were analyzed across various departments within our hospital. The objective was to evaluate the quality and completeness of these prescriptions against established guidelines.

A significant 80.6% (422) of prescriptions did not specify the drug's serial number as shown below in Table 1. Only 19.4% (100) included this essential detail, highlighting an area that requires immediate attention. For most prescriptions, 82% (428) used abbreviations. The data revealed a strong inclination towards generic names, with 80.7% (421) of prescriptions opting for generic over brand names which is 19.3% (100). A majority of 80.5% (420) of prescriptions specified the route of drug administration. Encouragingly, a vast majority 98.7% (515) of the prescriptions indicated the drug frequency. A commendable 86.4% (451) of the prescriptions detailed the duration for which the drug should be taken. A concerning 76.4% (398)of prescriptions lacked specific instructions on how to take the medication. Interestingly, only 36.3% (124) of the medicines were prescribed in the capital letters.

These findings underscore the importance of continuous monitoring and improvement in prescription practices. We can further enhance patient safety, adherence, and overall healthcare outcomes by addressing the identified gaps

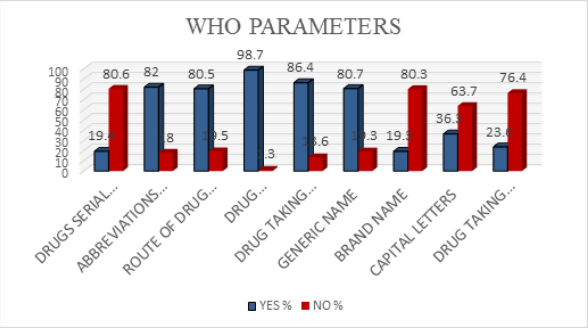

Figure 1.

Table 1 - Parameters Assessed As Per World Health Organization Drug Use Indicators

PARAMETERS	YES %	NO %
DRUGS SERIAL NUMBER	19.4	80.6
ABBREVIATIONS USED	82	18
ROUTE OF DRUG MENTIONED	80.5	19.5
DRUG FREQUENCY MENTIONED	98.7	1.3
DRUG TAKING DURATION MENTIONED	86.4	13.6
GENERIC NAME	80.7	19.3
BRAND NAME	19.3	80.3
CAPITAL LETTERS	36.3	63.7
DRUG TAKING INSTRUCTIONS MENTIONED	23.6	76.4

DISCUSSION

Prescription writing is a cornerstone of medical practice, with physicians ethically and legally obligated to ensure completeness and clarity in their prescriptions. In our study, we found that all prescriptions included necessary details, such as the date of prescription and comprehensive patient information (name, age, sex, address), systematically recorded at the time of patient registration. This contrasts with findings from studies on handwritten prescriptions, where patient information is often incomplete. Accurate documentation of patient details is crucial for medicolegal purposes and ensuring that patients receive appropriate treatment tailored to their diagnosis.

Upon analyzing the prescriptions, it became evident that there were notable deficiencies in documenting essential aspects such as medical history, physical examinations, diagnoses, and recommended investigations. Contributing factors include the heavy workload in outpatient departments (OPDs), patients presenting with nonspecific complaints, and doctors relying more on verbal communication rather than detailed written records. Furthermore, prescriptions frequently lacked comprehensive instructions for follow-up care, reasons for referrals, dos and don'ts for patients, specifics on drug formulations, and clear directions for administration. Common prescribing errors, including dosing inaccuracies (26.7%) and omission of treatment durations (27.5%), highlight potential risks such as treatment ineffectiveness, antibiotic resistance, and adverse drug reactions, exacerbated by the availability of drugs in varying strengths and forms.

Our study highlighted a major concern, as 76.4% of prescriptions did not include specific instructions on how to take the medications. This issue is similarly noted by Jose et al. (2024), who emphasized that clear instructions are crucial to help patients adhere to their prescribed medication regimens effectively [Jose et al., 2024].

Our study revealed that 80.6% of the prescriptions lacked the drug's serial number, and 82% utilized abbreviations, which could jeopardize clarity and patient safety. This observation is consistent with findings from Medhi et al. (2022), who also identified similar issues with prescription completeness in various Indian tertiary care centers, highlighting a prevalent concern regarding prescription accuracy [Medhi et al., 2022].

Illegible handwriting among prescribing doctors (15%) emerged as a significant concern, potentially leading to medication errors and adverse reactions. Moreover, only 65.8% of prescriptions featured readable signatures or initials of the prescribing physician, with a minimal 3.3% including their registration number, which is crucial for authentication. Encouraging the use of capital letters in prescriptions and transitioning to electronic prescribing systems are recommended steps to mitigate such errors.

The World Health Organization (WHO) recommends core prescribing indicators to assess healthcare providers' performance in ensuring appropriate drug use. In our study, the average number of drugs prescribed per consultation was 3.02 ± 0.81, consistent with patterns observed in secondary-level hospitals. However, the prevalence of antibiotic prescriptions (over 50%) exceeded WHO recommendations (20%–25.4%), indicating potential overuse and contributing to the growing issue of antimicrobial resistance. Addressing this issue requires robust national action plans and educational initiatives aimed at promoting responsible antibiotic use among healthcare professionals and raising awareness among the general public.

The availability and adherence to an Essential Drug List (EDL) in most outpatient departments (OPDs) were encouraging, promoting rational prescribing practices and enhancing overall quality of care. Regular prescription audits are essential for optimizing drug prescriptions and ensuring continuous improvement in hospital quality standards. These audits help identify and rectify prescribing errors, thereby promoting safer patient care and adherence to best practices in drug management.

CONCLUSION

This study highlights the critical role of accurate and complete prescription writing in ensuring patient safety and effective treatment. Regular prescription audits and strict adherence to WHO guidelines are crucial for improving prescription quality. By implementing these practices, healthcare providers can enhance the quality of care, promote rational drug use, and ensure better clinical outcomes.

Ethical Approval

Ethical approval was obtained from the Institutional Ethics Committee

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Nil.

Conflicts Of Interest

There are no conflicts of interest.

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