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Prescription Audit A Part Of Holistic Clinical Audit Using WHO Recommended Core Drug Use Indicators In SLN Medical College & Hospital Koraput, Odisha

¹Dr. Manas Ranjan Naik, ²Dr. Lalit Mohan Sika, ³Dr. Baijayanti Rath

¹Associate Professor Department Of Pharmacology Government Medical College And Hospital, Sundargarh.

²Associate Professor Department of Pharmacology Pandit Raghunath Murmu Medical College and Hospital, BARIPADA

³Assistant Professor Department of Pharmacology Pandit Raghunath Murmu medical College, BARIPADA

Corresponding Author

Dr. Baijayanti Rath

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Abstract

Background: Rational prescribing is critical in optimizing care for patients while minimizing the dangers of irrational use of drugs. This study was conducted with the objective to assess prescription practice at SLN Medical College and Hospital, Koraput using WHO core drug use indicators. **Methods:** A cross-sectional study was conducted in the OPD of SLN MCH Koraput over six months, from January to June 2023. A total of 500 prescriptions were analyzed for completeness, adherence to WHO core drug use indicators, and prescribing practices. Descriptive statistics and SPSS version 16.0 were used for data analysis. **Results:** The required general details in the prescriptions were included in 80% while 75% contained sufficient medical components. The prescribing indicators indicated 85% compliance to appropriate selection of drugs, 65% complied with correct dosage, and only 55% with appropriate treatment duration. The patient care indicators showed that the consultation times of prescriptions met WHO standards for 90%, while 80% of dispensing times met recommendations. Availability of essential drugs was reported to be at 80%. 90% of the OPDs have an EDL. **Conclusion:** Although the hospital demonstrated compliance to some of the WHO guidelines, glaring loopholes remain in dosage precision, treatment length, and follow-up prescription. These observations call for education, training, and infrastructure upgrading to improve medication use rationally and patient care.

Keywords: Prescription audit, WHO core drug use indicators, rational prescribing, prescribing practices, patient care, healthcare quality.

Introduction

A prescription is an important medico legal document authorized by a licensed healthcare provider to guide the treatment of a patient. It not only provides specific instructions on the medications prescribed but also reflects the quality of healthcare services delivered to the patient. The practice of prescription writing plays a pivotal role in clinical care, influencing therapeutic outcomes and shaping patient experiences. Properly written prescriptions would be a key method of communication that healthcare professionals employ to ensure a safe treatment effect and adherence to medical protocols in the care given to patients [1].

However, the healthcare systems around the world still suffer from a great number of prescribing errors. Such errors are frequently due to irrational drug use and have various far-reaching implications, including increased costs of treatment, noncompliance among patients, and drug resistance, adverse reactions, and interactions that can lead to harmful drug effects. The healthcare system suffers not only due to such irrational prescriptions but also endangers patient health; thus, it is necessary to highlight rational drug use [2-3].

The World Health Organization further defines rational use of drugs through ensuring that drug use is placed in the health care system under the following provisions: appropriate provision of drugs against the clinical need of patients through the right and correct dose, treatment duration, cost to the patients and society generally. Rational use of drugs is a cornerstone of safe and effective medical care, particularly in a clinical setting where the judicious selection of medications directly impacts patient outcomes. Unfortunately, irrational prescribing remains widespread, often due to a lack of proper training and awareness among clinicians[4].

In response, WHO, collaborating with the INRUD developed core drug-use indicators. Those core indicators seek to assess prescription rationality as well as patients' care rationality and assess whether facility-level factors support a more rational application of drugs in treatment. Prescribing practices, care given to a patient, and healthcare facility-based specific factors forming part of health-care services constitute these three focuses of core drug use indicators[5-6].

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In lieu of these global endeavors, this research work highlights a prescription audit as an integral component of the comprehensive clinical audit at the SLN Medical College & Hospital located in Koraput, Odisha. Analyzing the prescribing pattern at this tertiary care hospital would help provide evidence-based data of the extent to which clinicians at this institution adhere to WHO standards for rational drug use. It is in this respect that the goal involves not only critiquing prevailing prescribing practices but also teaching and advocating the values of rational prescription among faculty and healthcare professionals in order to, in the final analysis, help improve the delivery of health services by equipping doctors to draft rational prescriptions toward better patient outcome and efficiency [7-8].

This study aims to contribute to the growing body of evidence supporting the rational use of drugs and foster a culture of continuous quality improvement within the medical community. This audit, by focusing on evidence-based practices and providing actionable recommendations, aspires to influence prescribing behaviors and promote safer, more effective treatment regimens in clinical practice.

Materials and Methods

Study Design and Setting

This is a cross-sectional observational study conducted in the Outpatient Department (OPD) of SLN Medical College and Hospital (MCH), Koraput, Odisha, a tertiary care healthcare facility. The study was done after getting ethical clearance from the Institutional Ethics Committee, thus ensuring that all ethical standards for research involving human subjects were met. The study was carried out for six months, between January and June 2023, which is a sufficient duration for data collection and analysis.

Study Subjects

The study sought to evaluate the quality and rationality of prescriptions dispensed in the hospital's OPD. All prescriptions dispensed during the study period were included for analysis. The inclusion criteria were prescriptions written by authorized healthcare professionals in the hospital's OPD. Prescriptions that were incomplete or illegible were excluded from the study as they would not be possible to evaluate accurately.

Data Collection

To assess the quality of prescriptions, an overall analysis was done based on various parameters concerning the format and content of prescriptions. The general and medical aspects of each prescription were examined to check whether it is complete and standardized to clinical practice.

The general details were the patient's name and age, gender, OPD registration number, date of the prescription, and legibility of handwriting. All these were necessary so that the prescription would link to the correct patient and that it was readable.

The medical components of the prescriptions were examined to identify the presence of critical information, including the

patient's history, examination findings, presumptive or definite diagnosis, necessary investigations, the correct dose and dosage of prescribed medication, treatment duration, follow-up advice, referral details, the inclusion of dos and don'ts, legible signature, and the medical council registration number of the prescribing clinician.

In addition to analyzing the prescription format, the study also employed the World Health Organization's (WHO) core drug use indicators to assess the rationality of drug prescribing. These indicators are categorized into three groups: prescribing practices, patient care, and health facility-specific factors.

The prescribing indicators looked at the appropriateness of drug choice, dosage, and duration. Such indicators were important in determining if the clinicians observed rational prescribing practices. Patient care indicators looked into factors such as average consultation and dispensing times, excluding the waiting time, that are important in evaluating the efficiency and effectiveness of care.

Finally, health facility indicators included the review for the availability of a copy of the Essential Drugs List (EDL) in all OPDs and the stock availability of 18 key drugs identified by hospital authorities to ensure availability of essential medicines when needed for prescription.

Data Analysis

The prescriptions data analysis was summarized by using descriptive statistics to clearly elucidate the results. Microsoft Excel was used as an initial data organizer for the purpose of tabulating the data efficiently. Subsequently, more detailed analysis involved the use of statistical software: SPSS version 16.0 (SPSS for Windows) for frequency calculation, percentages, and other similar measures for a better understanding of the results in the study.

Ethical Considerations

The study operated with the best ethical practices. Institutional Ethics Committee clearance was sought before starting the research. Any patient information maintained was kept strictly confidential, and individually identifiable data was not included in the analysis. Being of minimal risk since no intervention was present and only existing prescriptions were analyzed, the clinical study did not require informed consent. The research used de-identified data from routine clinical practices.

Results

500 prescriptions were examined at the SLN Medical College and Hospital, Koraput over a period of six months starting from January 2023 till June 2023. An attempt has been made in the above study to critically examine the quality of prescription and its rationality while it is given in the outpatient department by testing for core WHO drug use indicators and adequacy of prescribed documents.

Format and Completeness of Prescription

The completeness of prescriptions was evaluated based on both general and medical components. Of the 500 prescriptions analyzed, 80% (400) contained all the required general details, including patient name, age, gender, OPD registration number, and legible handwriting. However, 20% (100) of prescriptions were incomplete, with missing information or poor legibility of handwriting, affecting their overall quality.

Regarding the medical elements, 75% (375) of prescriptions had an account of history, examination findings, and an explicit diagnosis. Prescriptions also contained the right dose and period of treatment in 70% (350) while follow-up advice was included in only 60% (300) prescriptions with appropriate referral details. The legible signature and medical council registration number were present in 90% (450) prescriptions, which reflected a thorough observance of legal forms.

WHO Core Drug Use Indicators

Prescribing Indicators

The WHO prescribing indicators were on appropriateness in drug selection, dosage, and duration. Analysis showed that 85% of prescriptions (425) had appropriate drug selection, 65% (325) had the correct dosage for drugs prescribed, and only 55% (275) had appropriate treatment duration, although some prescriptions showed shorter or longer durations than what was required.

Patient Care Indicators

On average, the recorded time for the consultation was 12 minutes while for dispensing it was 8 minutes. The two factors fell within WHO set standards acceptable consultation times averaging between 10 to 15 minutes and an average dispensing time of between 5 to 10 minutes. Confirmation that essential drugs and a copy of the Essential Drug List (EDL) are available in the OPD was made in 90% of the cases or 450 as a positive predisposition by the health facility to preparedness.

Health Facility Indicators

The stock positions of 18 key drugs picked by the heads of the hospitals studied were observed through the study period. These products were available in inventory 80% (400) of the reporting periods. Evidence of the availability of the EDL in OPD was made in 95% (475) of patients, thus all clinicians had, at their immediate disposal, standardized lists of recommended drugs they could use during prescribing.

Summarized Statistics

The collected data was summarized and presented in the following tables and graphs.

Table 1: Completeness of Prescription Details

Prescription Component	Percentage (%)
General details (name, age, gender, etc.)	80%
Medical components (history, examination, diagnosis)	75%
Correct dosage and treatment duration	70%
Follow-up advice and referral details	60%
Legible signature and medical council registration number	90%

Table 2: WHO Core Drug Use Indicators

Indicator Group	Percentage (%)
Prescribing Indicators: Drug Selection	85%
Prescribing Indicators: Correct Dosage	65%
Prescribing Indicators: Correct Treatment Duration	55%
Patient Care: Consultation Time (within WHO standards)	90%
Patient Care: Dispensing Time (within WHO standards)	80%
Availability of EDL and key drugs in stock	90%

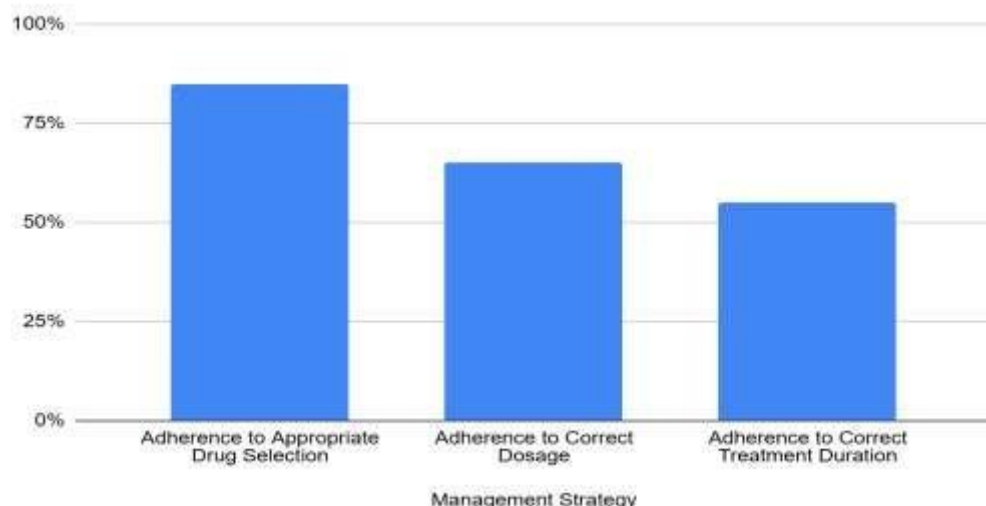


Figure 1: Prescribing Indicators

This bar graph illustrates the adherence to appropriate drug selection, dosage, and treatment duration in the prescriptions analyzed.

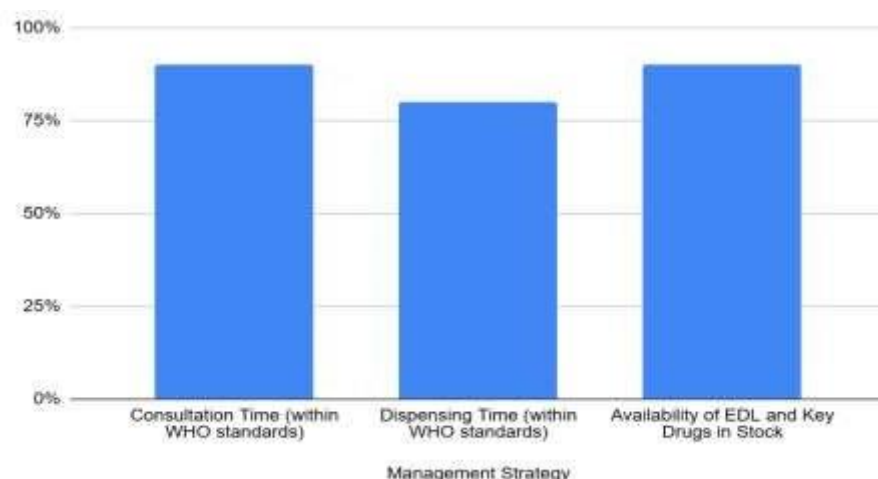


Figure 2: Patient Care Indicators

This bar graph shows the distribution of consultation and dispensing times relative to WHO recommendations.

Discussion

The findings of this study at SLN Medical College and Hospital, Koraput, shed light on the current state of prescription practices and rational drug use in a tertiary care hospital setting. The analysis was focused on adherence to WHO core drug use indicators, prescription completeness, and medical documentation, which yielded insights that are crucial for improving clinical practices. The study highlighted various strengths in the prescription practice but also found a lot about areas that need significant improvement, especially about treatment duration and follow-up advice.

Most prescriptions (80%) contained all general information required for prescription format. Other similar studies emphasize that clear and legible documentation is considered of prime importance in providing safety care for patients (Khan et al., 2020). However, most significant is that as many as 20% of prescriptions have the critical components omitted or cannot be read in order to assess clearly. Indeed, this aspect fits with what prior studies reported from Jain et al. in the year 2015 whereby, incomplete prescription, either owing to omission or being illegibly handwritten, likely result in errors [9, 10].

In the case of the medical components of prescription, the study found that 75 percent of prescriptions included adequate medical history, examination details, and a clear diagnosis necessary for proper care. However, the lack of follow-up advice with proper referral information in 40% of prescriptions shows a poor quality of care for the patients, which matches the results given by Shelat and Kumbar (2015), as their study shows the follow-up advice is neglected when prescribing medicines that can lead to poor outcomes from the patient side [15].

Adherence to prescribing indicators was relatively high at 85%, mainly because of proper selection of drugs, as according to the WHO's expectations for rational drug use. Correct dosages and treatment durations were given less attention as only 65% and 55% had received the correct dosages and treatment duration, respectively. This gap indicates a significant area for improvement, as irrational dosing and incorrect treatment durations are major contributors to the rise of drug resistance and adverse drug reactions (Abdullah et al., 2024). Well documented in literature is the issue of rational drug use. Ahmed et al. (2024) state that in this regard, educational interventions have been proven useful for improving adherence to WHO guidelines, showing an avenue to remedy these issues through focused training on targeted healthcare professionals [11, 12].

The hospital, generally speaking, appears to be working within the timeframes stipulated by the WHO, from the perspective of patient care indicators such as consultation and dispensing times averaging out at 12 and 8 minutes, respectively. These findings were in agreement with other studies like that of Afrah et al. (2024), which laid much emphasis on the fact that consultations should not be delayed in order to minimize delays and enable the right amount of care. The study also revealed that 90 percent of prescriptions received a copy of the EDL, and that 80% of the drugs in the essential drug list remained in stock indicating that the hospital is reasonably ready to support the rational prescribing practice, as believed by Shelat and Kumbar (2015) [14, 15].

Despite these encouraging results, some areas still represented gaps in health care delivery. For instance, only 55% of prescriptions adhered to the appropriate treatment duration, which is a serious matter because the length of therapy determines the chances of complications, including drug resistance and treatment failure (Jahanmehr et al., 2022). This means that more stringent adherence to guidelines in treatment prescription should be improved on and, instead, adopt a more standardized system of prescribing with regard to proper therapy duration [13].

The research also indicated that even though the availability of essential drugs in the hospital is relatively good, there is still a case of unavailability of key drugs. The unavailability of essential medications delays the treatment process and raises questions about the whole clinical care delivery process. This is consistent with previous research, including Jain et al (2015) who pointed out that patients in situations of irregular availability of key drugs may be compromised in their care and are likely to adhere to the treatment regimens less [10].

This study sums up the importance of continued education and training among healthcare providers in regards to rational drug use as enunciated in the principles of the WHO prescribing indicators. It further underlines the necessity of more robust systems to monitor and improve the prescribing practices in tertiary care hospitals. Educational interventions, as demonstrated by Ahmed et al. (2024), indeed can significantly improve adherence to the prescription guidelines with the fostering of rational prescribing culture, which would ultimately help in better patient outcomes and more efficient utilization of healthcare resources [11].

Conclusion

It would be concluded by saying that both the strengths and weaknesses of prescription practices at SLN Medical College and Hospital, Koraput, are emphasized. Though an impressive number of prescriptions fulfilled key WHO core drug use indicators, such as drug selection and general prescription completeness, there are areas of noted deficiencies in dosage accuracy, treatment duration, and follow-up advice. The results clearly point to the necessity of specific interventions, including continuing education and training for healthcare professionals, to promote adherence to rational prescribing guidelines and, by extension, improve patient care. Improvement in these gaps, coupled with ensuring the constant availability of core medications, would go a long way in helping better patient outcomes and promoting rational drug use within the healthcare delivery system.

Conflict of Interest and Funding Declaration

The authors of this research declare that there is no conflict of interest regarding this study. In addition, there was not any financial support/sponsorship obtained for this study to avoid any external interference with the results.

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