

CLINICAL ASSESSMENT AND APPLICABILITY OF POPI-INDIA CRITERIA IN PEDIATRIC PRESCRIBING: A PROSPECTIVE STUDY IN INPATIENT AND EMERGENCY SETTINGS

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Received: 24th July, 2026; Revised: 17th Aug, 2026; Accepted: 27th Sep, 2026; Available Online: 24th Oct, 2026

Abstract

Background: Rational prescribing in pediatric patients is essential to ensure medication safety, therapeutic effectiveness, and the prevention of potentially inappropriate prescriptions and prescribing omissions. The Pediatrics: Omission of Prescriptions and Inappropriate Prescriptions (POPI) criteria provide a structured approach for assessing prescribing practices. However, their applicability within Indian pediatric healthcare settings requires further evaluation.

Objective: To assess pediatric medication prescribing patterns and evaluate the clinical applicability of the POPI-India criteria among patients receiving treatment in inpatient and emergency department settings.

Methods: A prospective observational study with a cross-sectional prescription assessment was conducted at Aster Prime Hospital, Hyderabad, India. The study included 600 pediatric patients aged from birth to 18 years, comprising 450 inpatients and 150 emergency department patients. Patient demographics, presenting symptoms, clinical diagnoses, and prescribed medications were systematically reviewed. The clinical applicability of the POPI-India criteria was evaluated by identifying symptoms and diagnoses corresponding to the predefined screening categories. Descriptive statistical methods were employed to analyze prescribing patterns, clinical indications, and demographic characteristics.

Results: Among the 600 pediatric patients, 400 (66.7%) were male and 200 (33.3%) were female. The largest age group comprised children aged 1–5 years (193 patients; 32.2%), followed by infants younger than one year (186 patients; 31.0%). According to the study records, 1,608 prescriptions were evaluated. Pain and fever were the most frequently documented clinical indications (365 cases), followed by nausea, vomiting, or gastroesophageal reflux (144 cases), cough (87 cases), and diarrhea (48 cases). Paracetamol was the most frequently prescribed medication according to the tabulated results (326 prescriptions), followed by ibuprofen (157 prescriptions). Overall, 595 patients (99.2%) had at least one documented symptom or diagnosis corresponding to the POPI-India criteria. Six criteria categories were not represented in the study population. Furthermore, several diagnoses, including jaundice, appendicitis, soft tissue injuries, and head injuries, were identified outside the predefined clinical categories.

Conclusion: The POPI-India criteria demonstrated broad clinical applicability to the presenting symptoms and diagnoses of pediatric patients in the evaluated inpatient and emergency settings. However, the identification of clinical conditions not represented within the predefined criteria indicates potential limitations in their coverage. Further multicenter evaluation and refinement of the tool may improve its relevance to Indian pediatric prescribing practices and support systematic medication safety assessment.

Keywords: POPI-India criteria; Pediatric prescribing; Potentially inappropriate prescribing; Prescribing omissions; Medication safety; Rational drug use; Inpatient care; Emergency department

How to cite this article: S. Jayakumari^{1*} and 2Dr. Syed Jaffer. CLINICAL ASSESSMENT AND APPLICABILITY OF POPI-INDIA CRITERIA IN PEDIATRIC PRESCRIBING: A PROSPECTIVE STUDY IN INPATIENT AND EMERGENCY SETTINGS. Int J Drug Deliv Technol. 2026;16(7):2209-2220. DOI: 10.25258/ijddt.16.7.226.

Introduction

Pediatric medication is an essential component of effective healthcare delivery, as children represent a vulnerable population with distinct physiological, developmental, and pharmacological characteristics.

The pharmacokinetics and pharmacodynamics of medications vary considerably across different pediatric age groups, particularly among neonates, infants, children, and adolescents. These variations

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influence drug absorption, distribution, metabolism, and elimination, making appropriate drug selection, dosage calculation, and therapeutic monitoring particularly important. Inappropriate prescribing practices may increase the risk of adverse drug reactions (ADRs), treatment failure, medication-related complications, and avoidable healthcare utilization. Consequently, ensuring rational prescribing practices remains a major priority in pediatric healthcare, particularly in inpatient and emergency settings where patients frequently require multiple medications and timely therapeutic interventions [1,2]. Potentially inappropriate prescribing (PIP) refers to the use of medications for which the potential risks outweigh the expected therapeutic benefits, particularly when safer or more effective alternatives are available. It also includes prescribing medications without appropriate clinical indications, selecting unsuitable drug formulations, administering inappropriate doses, and continuing treatment for unnecessarily prolonged durations. In addition to inappropriate medication use, failure to prescribe clinically indicated medications is recognized as a potential prescribing omission (PPO). Both inappropriate prescriptions and prescribing omissions can compromise treatment effectiveness and patient safety. The identification and prevention of these prescribing problems are particularly important in pediatric practice because medication requirements and therapeutic responses differ considerably between age groups. Previous investigations have demonstrated that adverse drug reactions constitute a significant concern in pediatric healthcare. [1] systematically evaluated the incidence of adverse drug reactions among pediatric inpatients and outpatients, highlighting the importance of medication safety surveillance. Similarly, Thiesen et al. [2], in a prospective observational cohort study involving 6,601 pediatric hospital admissions, investigated the incidence, characteristics, and risk factors associated with adverse drug reactions. These investigations emphasize the need for systematic medication assessment and the implementation of strategies to identify potentially inappropriate prescriptions before they result in preventable medication-related harm. Several structured prescribing assessment tools have been developed to improve medication safety and identify inappropriate medication use. In older adults, the Beers criteria and Screening Tool of Older Persons' Prescriptions/Screening Tool to Alert Doctors to Right Treatment (STOPP/START) criteria have been used to support rational medication management [3–6]. However, the clinical characteristics and therapeutic requirements of pediatric patients differ substantially from those of adults, limiting the applicability of prescribing criteria developed for older populations.

This has created a need for pediatric-specific tools capable of identifying inappropriate prescribing and clinically relevant prescribing omissions. To address this requirement, Prot-Labarthé et al. [7] developed the Pediatrics: Omission of Prescriptions and Inappropriate Prescriptions (POPI) tool in France. POPI was designed as a structured screening instrument to identify potentially inappropriate prescriptions and prescribing omissions in pediatric patients across different clinical conditions. The tool provides explicit criteria intended to support medication review and improve prescribing quality. Subsequent investigations have examined its reliability and applicability in clinical practice. Berthe-Aucejo et al. [10] evaluated the inter-rater reliability of the POPI tool, contributing to the assessment of its consistency in identifying inappropriate prescribing. Furthermore, Corrick et al. [25] investigated modifications to the original POPI criteria to improve their suitability for pediatric prescribing practices in the United Kingdom. Although pediatric prescribing assessment tools provide valuable guidance, their applicability may vary according to national treatment guidelines, medication availability, healthcare infrastructure, disease patterns, and local prescribing practices. A prescribing recommendation developed in one country may not necessarily reflect the therapeutic requirements or clinical circumstances encountered in another healthcare system. Therefore, the adaptation and evaluation of pediatric prescribing criteria within different national contexts are important for determining their practical relevance. In India, variations in healthcare resources, clinical presentations, prescribing practices, and medication utilization create a need to examine whether adapted POPI criteria adequately represent the conditions encountered in routine pediatric care.

The inpatient and emergency department settings provide important clinical environments for evaluating pediatric prescribing practices. Hospitalized children may require complex medication regimens because of acute illnesses, underlying medical conditions, and the need for supportive treatments. Similarly, pediatric patients presenting to emergency departments often require prompt clinical assessment and medication administration for conditions such as fever, pain, respiratory symptoms, gastrointestinal disturbances, infections, and other acute presentations. These circumstances may increase the complexity of prescribing decisions and highlight the importance of systematic medication review. Evaluation of prescribing patterns in both settings can provide useful information regarding medication utilization, frequently encountered clinical indications, and opportunities for improving rational prescribing practices. In addition, the usefulness of an explicit

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prescribing assessment tool depends not only on its ability to identify potentially inappropriate prescriptions but also on the extent to which its clinical categories correspond to the symptoms and diagnoses encountered in the target patient population. When relevant clinical conditions are not adequately represented, potentially important prescribing issues may remain outside the scope of the assessment. Conversely, criteria that rarely correspond to local clinical presentations may have limited applicability in routine practice. Examining the distribution of clinical indications, the frequency of medications prescribed, and the correspondence between patients' diagnoses and POPI criteria is therefore necessary to understand the tool's clinical relevance and potential limitations. Despite the development of pediatric-specific prescribing screening instruments, evidence concerning their practical applicability within Indian hospital settings remains an important area for investigation. In particular, evaluating the POPI-India criteria across inpatient and emergency departments may provide a clearer understanding of their relevance to routine pediatric prescribing and identify clinical categories that require further consideration. Such evaluations may also support future refinement of prescribing assessment instruments to reflect local patterns of pediatric illness and medication use. Therefore, the present study aimed to assess pediatric prescribing practices and evaluate the clinical applicability of the POPI-India criteria among patients attending the inpatient and emergency departments of Aster Prime Hospital, Hyderabad, India. The study examined patient demographic characteristics, medication prescribing patterns, common clinical indications, and the correspondence between documented symptoms or diagnoses and the POPI-India categories. Additionally, it sought to identify clinical conditions encountered in the study population that were not represented within the predefined criteria. Through this assessment, the study intended to provide evidence regarding the practical relevance of the POPI-India tool and identify areas for further evaluation and refinement to support rational and safe medication use in pediatric clinical practice.

Methodology

Study Design and Setting

A prospective observational study with a cross-sectional prescription assessment was conducted at Aster Prime Hospital, Hyderabad, India, to evaluate pediatric prescribing practices and assess the clinical applicability of the Pediatrics: Omission of Prescriptions and Inappropriate Prescriptions (POPI)-India criteria. The study was undertaken in the

pediatric inpatient wards and emergency department to examine prescribing practices across different clinical settings. A prospective approach was adopted to enable the collection of contemporaneous clinical information, including patient characteristics, presenting symptoms, diagnoses, and prescribed medications. This approach was particularly relevant because prescribing and medical record-keeping involved both handwritten and electronic documentation, and some emergency department prescriptions might not have been retained in the hospital records following discharge.

Study Population and Sample Size

The study included 600 pediatric patients aged from birth to 18 years who received medical care in the selected hospital settings. Of these, 450 patients were recruited from the inpatient department and 150 from the emergency department. The target sample size was established with reference to the World Health Organization's recommendations for rational prescribing studies. A formal statistical power calculation was not performed because reliable preliminary estimates of the prevalence of prescribing indicators identified by the POPI-India criteria were unavailable. The study population was categorized into five age groups: younger than one year, 1–5 years, 6–10 years, 11–15 years, and older than 15 years up to 18 years. This classification facilitated the examination of age-related variations in clinical presentations and prescribing practices.

Data Collection Procedure

Data were collected prospectively through a systematic review of patients' medication charts and available clinical records during their hospital encounters. Each patient's prescription chart was assessed at a defined point in time, while relevant clinical information was obtained from medical documentation to support the evaluation of prescribing appropriateness. The recorded variables included age, gender, clinical setting, presenting symptoms, documented diagnoses, prescribed medications, and the number of medications prescribed. Particular attention was given to identifying clinical indications relevant to the POPI-India criteria and establishing the relationship between the patient's clinical condition and prescribed treatment. Medication information was examined to characterize prescribing patterns in both inpatient and emergency settings. The collected data were organized according to patient demographics, clinical indications, individual medications, and POPI-India categories. Prescription assessment was

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conducted alongside routine clinical pharmacist review and did not replace the hospital's established prescription evaluation procedures.

Assessment of Prescribing Patterns

The prescribing patterns were assessed by examining the distribution and frequency of medications documented in the study population. Prescriptions were classified according to clinical setting, and the frequently prescribed medications were identified to describe differences in medicine utilization between inpatient and emergency care. The evaluation included commonly used analgesics and antipyretics, bronchodilators, antibiotics, corticosteroids, antiemetics, and other medications recorded in the study. Clinical indications were categorized into pain and fever; nausea, vomiting, or gastroesophageal reflux; cough; ear, nose, and throat infections; diarrhea; urinary tract infections; bronchiolitis; asthma; atopic eczema; and epilepsy. These categories were selected to correspond with the clinical conditions represented in the POPI-India assessment and the diagnoses documented among the study participants. Patients presenting with more than one relevant clinical indication could contribute to multiple clinical categories.

Application of POPI-India Criteria

The POPI-India criteria were applied as a structured screening framework to examine prescribing appropriateness and determine their applicability to pediatric patients in the Indian hospital setting. Each patient's documented symptoms, diagnoses, and prescribed medications were compared with the corresponding criteria to identify clinically relevant prescribing indicators. The assessment considered potentially inappropriate prescribing, including medication use that may be unsuitable for a particular clinical condition, and potential prescribing omissions where an indicated treatment had not been prescribed. The applicability of the criteria was determined by identifying whether individual patients presented with at least one symptom or diagnosis corresponding to a clinical category covered by the POPI-India tool. The number of patients meeting this requirement was recorded, and the distribution of applicable clinical categories was examined separately for inpatient and emergency department encounters. Clinical categories without corresponding presentations in the study population were also identified to assess the extent to which the tool reflected the conditions encountered in routine pediatric care. In addition, diagnoses documented among the participants but not

represented within the predefined POPI-India categories were examined. This analysis provided a basis for identifying potential limitations in the clinical coverage of the tool and areas that may warrant consideration during future revisions.

Statistical Analysis

The collected data were compiled, organized, and analyzed using Microsoft Excel. Descriptive statistical methods were employed to summarize demographic characteristics, medication utilization, clinical indications, and POPI-India applicability. Categorical variables were expressed as frequencies and percentages, while the mean and median numbers of medications prescribed per patient were included in the planned analysis. Prescribing characteristics were compared across different age groups, genders, and clinical settings. The proportions of patients with relevant POPI-India clinical indications and the frequencies of identified prescribing indicators were evaluated to describe the applicability of the criteria. The chi-square test was specified for assessing associations between categorical variables, including differences in prescribing patterns across patient groups. Results were organized into tables and graphical representations to facilitate interpretation of demographic distributions, medication use, clinical conditions, and the relevance of POPI-India criteria to the study population.

Ethical Considerations

The study involved the assessment of clinical information obtained during routine pediatric care. Prescription evaluation was performed without replacing or interfering with the standard clinical review undertaken by healthcare professionals. Patient information was intended to be handled confidentially and used for research-related analysis. Details regarding institutional ethics committee approval, informed consent or consent waiver, and the approval reference number should be included following confirmation from the original study records.

Results

Population Characteristics

A total of 600 pediatric patients were enrolled in the study, comprising 450 inpatients and 150 emergency department (ED) patients. The study analyzed a comprehensive dataset of 1,608 prescriptions, with 1,279 originating from the inpatient cohort and 329

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from the ED. A detailed overview of patient demographics, encompassing diagnosed condition, and frequently prescribed medications, is presented in Table 1

Table 1: Patient demographics

Age in years	No. of Participants		
	IP	ED	Total
<1	163	23	186
1-5	141	52	193
6-10	72	37	109
11-15	48	33	81
>15	26	5	31

Patient Demographics: Age Distribution

The study population was characterized by a distinct age distribution across inpatient (IP) and emergency department (ED) settings. Infants, aged less than one year, represented a substantial proportion of the patient cohort, with 163 cases managed in the IP setting and 23 in the ED. The next predominant age group encompassed children aged 1 to 5 years, comprising 141 IP cases and 52 ED cases. A discernible decreasing trend in patient numbers was observed with advancing age, particularly within the 6 to 18-year age bracket. These findings underscore the imperative for age-specific healthcare interventions to effectively address the unique medical requirements of different pediatric populations.

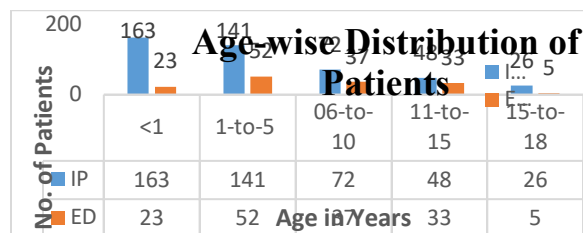


Figure 1: Age-wise Distribution of Patients

Table2: Gender-wise distribution of Patients

Age (years)	Male (IP)	Female (IP)	Male (ED)	Female (ED)	Total
<1	112	51	12	11	186

1-5	105	36	31	21	193
6-10	41	31	25	12	109
11-15	33	15	19	14	81
15-18	18	8	4	1	31
Total	309	141	91	59	600

This table 2 presents data on the number of male and female patients in two different categories: In-Patient (IP) and Emergency Department (ED), across various age groups. For infants under one-year-old, there were 112 male and 51 female in-patients, while the emergency department saw 12 males and 11 female patients. In the 1 to 5 years' age group, the number of male in-patients was 105, and female in-patients were 36, with the emergency department recording 31 male and 21 female patients. For children aged 6 to 10 years, there were 41 males and 31 female in-patients, and 25 male and 12 female emergency department patients. In the 11 to 15 years' age group, the in-patient numbers were 33 males and 15 females, while the emergency department had 19 male and 14 female patients. Finally, for adolescents aged 15 to 18 years, there were 18 male and 8 female in-patients, with the emergency department seeing 4 males and 1 female patient. This data highlights the distribution of patients by gender and age in both in-patient and emergency settings.

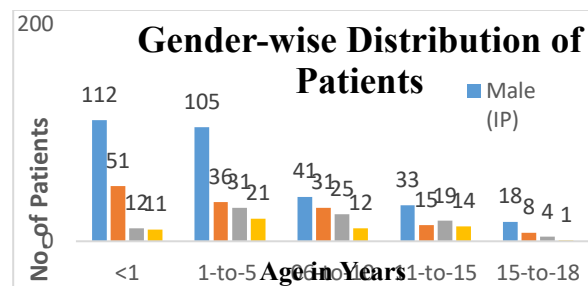


Figure 2: Gender-wise Distribution of Patients

Table 3: Number of medications prescribed

Number of medications prescribed			
Age of patient	IP	ED	Total
0	32	53	85
1-5	296	97	393
6-10	32	0	32
11-15	296	0	296
>15	95	0	95
Total	751	150	901

A detailed study on age-wise distribution and medication prescriptions in both inpatient (IP) and

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emergency department (ED) settings revealed important healthcare trends. Among infants (age 0), 32 medications were prescribed in IP and 53 in ED, showing a high need for medical treatment even in early life, with a total of 85 medications.

Moving into early childhood (ages 1 to 5), the data showed a substantial increase in medication prescriptions. In IP, a striking 296 medications were prescribed, while in the ED, 97 medications were administered, reaching a cumulative total of 393. This age range encompasses crucial developmental stages where children are susceptible to various illnesses, necessitating comprehensive medical management.

Interestingly, for children aged 6 to 10, medication prescriptions were notably lower. Only 32 medications were prescribed in IP, with no prescriptions recorded in the ED. This age group typically experiences fewer health issues compared to younger children, often exhibiting robust immune systems and resilience to common ailments.

In the adolescent age of 11 to 15 years, the data revealed a resurgence in medication prescriptions, particularly in IP, where 296 medications were administered. However, no prescriptions were documented in the ED for this age group. This trend could indicate a shift towards more severe conditions requiring hospitalization rather than immediate emergency treatment.

Lastly, for individuals older than 15 years, the data showed a decreased but still notable need for medical intervention. In IP, 95 medications were prescribed, while none were recorded in the ED. This suggests that older individuals may encounter health issues requiring inpatient care, possibly related to chronic conditions or complex medical needs.

This study highlights the relationship between age, healthcare utilization, and medication prescriptions. Understanding these patterns can help healthcare providers develop better approaches to meet the medical needs of patients in different age groups. (Table 3)

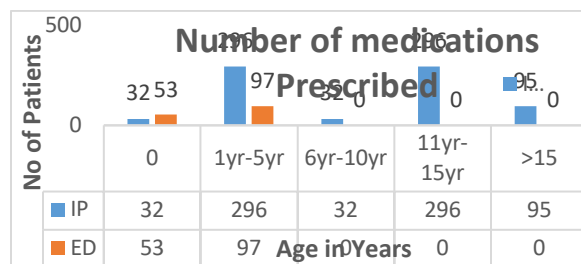


Figure 3: Number of medications Prescribed
Table 5: Clinical Indications in IP and ED Patients

Clinical indications	IP	ED	Total
Pain and fever	200	165	365
Nausea, vomiting, or gastro-esophageal reflux	92	52	144
Cough	61	26	87
ENT infections	20	18	38
Diarrhoea	30	18	48
Urinary infections	16	5	21
Bronchiolitis	12	2	14
Asthma	6	5	11
Atopic eczema	5	2	7
Epilepsy	5	1	6

The present research study thoroughly examined the medical conditions that lead patients to seek care in both inpatient (IP) and emergency department (ED) settings. By analyzing healthcare utilization patterns, the study provided valuable insights into the most common reasons for hospitalization and emergency visits. Among the various clinical indications, pain and fever were identified as the most frequent causes, with 200 cases reported in IP and 165 cases in ED. These findings highlight the significant impact of pain and fever on patients' overall health, emphasizing the need for timely medical intervention. Proper diagnosis and effective management of these conditions are crucial to reducing discomfort, preventing complications, and improving patient outcomes. Additionally, the study shed light on the prevalence of gastrointestinal issues, with 92 cases of nausea, vomiting, or gastroesophageal reflux disease (GERD) documented in IP, and 52 cases in the ED. This highlights the importance of addressing digestive health concerns in both acute and non-acute care settings. Respiratory conditions also featured prominently in the research findings, with 61 cases of cough recorded in IP and 26 in the ED. This emphasizes the considerable impact of respiratory ailments on healthcare utilization and underscores the need for effective management strategies, particularly during times of heightened concern such as seasonal flu outbreaks or respiratory virus epidemics. Further analysis revealed a variety of other clinical conditions presenting in both IP and ED settings. These included ear, nose, and throat (ENT) infections, diarrhea, urinary tract infections (UTIs), bronchiolitis, asthma, atopic eczema, and epilepsy. While each of these conditions may vary in severity and urgency, their collective presence underscores the diverse range of

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medical needs addressed in both inpatient and emergency care settings.

This research provides important insights into how different medical conditions affect healthcare utilization and patient needs in various care settings. By understanding these patterns, healthcare providers can improve their approach to delivering timely and effective treatment. This helps ensure better patient outcomes and enhances the overall quality of care. (Table-5)

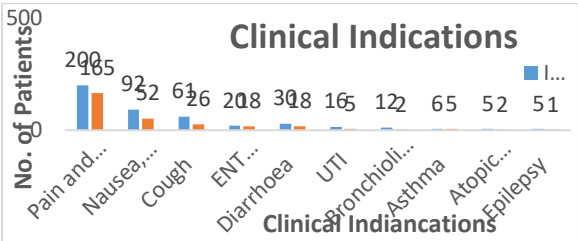


Figure 5: Clinical Indications in IP and ED Patients

Table 6: Drugs Prescribed in in IP and ED Patients

Drugs prescribed	IP	ED	Total
Paracetamol	265	61	326
Ibuprofen	122	35	157
Salbutamol	60	15	75
Amoxicillin	70	7	77
Morphine	60	7	67
Augmentin	36	10	46
Cefotaxime	36	9	45
Ondansetron	30	0	30
Ipratropium	22	2	24
Prednisolone	20	4	24
Cefuroxime	30	0	30

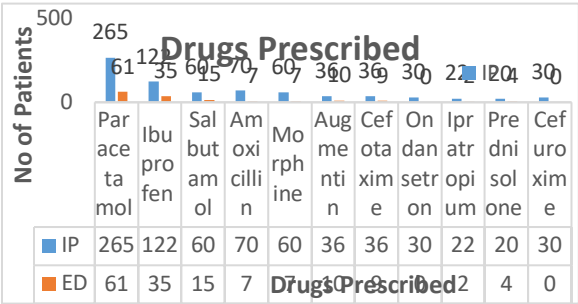


Figure 6: Drugs Prescribed in in IP and ED Patients

The current research study explored how medications are prescribed in both inpatient (IP) and emergency department (ED) settings. This study provides important insights into how medicines are used in different healthcare environments. Paracetamol emerged as the most frequently prescribed medication, with a substantial 285 prescriptions in the IP setting and 90 in the ED, totaling 375 prescriptions overall. This finding reflects the widespread use of paracetamol as a first-line treatment for pain and fever management across various medical conditions and underscores its importance in clinical practice. Following closely behind, ibuprofen garnered significant attention, with 142 prescriptions in IP and 70 in ED, resulting in a total of 212. Ibuprofen's popularity can be attributed to its efficacy in relieving pain, inflammation, and fever, making it a essential medication for a wide range of acute and chronic conditions. Salbutamol, a bronchodilator commonly used to manage asthma and other respiratory conditions, also featured prominently in the study. With 65 prescriptions in IP and 15 in ED, totaling 70, salbutamol highlights the prevalence of respiratory ailments and the need for effective medication management in both inpatient and emergency settings. Additionally, antibiotics such as amoxicillin, Augmentin, cefotaxime, and cefuroxime were frequently prescribed across both IP and ED settings, underscoring the importance of antimicrobial therapy in treating bacterial infections and preventing complications.

Furthermore, opioids like morphine were notably prescribed, albeit to a lesser extent, with 65 prescriptions in IP and 7 in ED, totaling 72. The controlled use of opioids is crucial for managing severe pain in hospitalized patients while minimizing the risk of misuse and dependence. The study also highlighted variations in medication utilization between IP and ED settings, with certain medications like ondansetron and prednisolone being prescribed exclusively in IP, possibly indicating a higher prevalence of specific conditions requiring these medications among inpatients. Overall, this study provides valuable insights into medication prescribing practices in different healthcare settings, emphasizing the importance of evidence-based prescribing to ensure optimal patient outcomes and quality of care (Table 6). By understanding medication trends and utilization patterns, healthcare providers can make informed decisions to meet the diverse needs of

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patients presenting with various medical conditions in both inpatient and emergency care environments.

Evaluation of POPI Indian Criteria: Relevance to Study Population

The primary objective of this study was to determine the proportion of pediatric patients who received prescriptions that could be evaluated using the POPI Indian criteria, adapted from the POPI UK criteria. A total of 600 pediatric patients were included in this study. Each patient's medical records were reviewed to identify documented symptoms or diagnoses that corresponded with the POPI Indian criteria. The patient cohort was divided into two groups: inpatients (n=353) and emergency department patients (n=242). Out of the 600 patients, 595 had at least one documented symptom or diagnosis that matched the POPI Indian criteria. The most frequently observed symptoms were pain or fever, reported in 365 patients. Other common indications included nausea, vomiting, or gastro-esophageal reflux, observed in 144 patients, followed by cough in 87 patients, and ENT (ear, nose, and throat) infections in 38 patients. It is noteworthy that some patients presented with symptoms or diagnoses that includes multiple categories. The analysis revealed that six categories within the POPI Indian criteria were not applicable to any patients in the study population. This finding underscores the need for potential revisions or updates to the criteria to enhance their relevance and applicability to the current patient population. The study highlights the significant overlap between the documented symptoms and diagnoses of pediatric patients and the POPI Indian criteria. The detailed distribution of patients with symptoms or diagnoses relevant to each category within the POPI Indian tool is presented in Table 5. This comprehensive evaluation underscores the importance of continuously updating clinical criteria to ensure their relevance and effectiveness in guiding omissions in pediatric prescriptions.

Table 7 : Patients with symptoms or diagnoses related to each POPI Indian category

POPI Indian category	No of patients presenting with related symptoms or diagnosis		
Clinical Indications	IP	ED	Total
Pain and fever	200	165	365

Nausea, vomiting, or GERD	92	52	144
Cough	61	26	87
ENT infection	20	18	38
Diarrhoea	30	18	48
UTI	16	5	21
Bronchiolitis	12	2	14
Asthma	6	5	11
Atopic eczema	5	2	7
Epilepsy	5	1	6

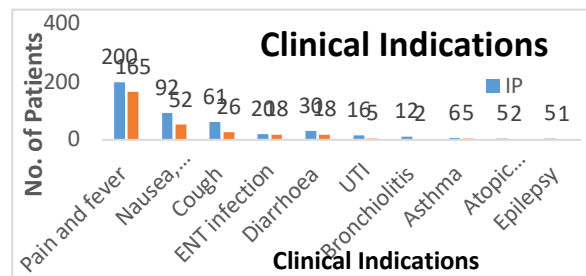


Figure 7: No of patients presenting with related symptoms or diagnosis in IP and ED.

The study identified several common diagnoses that were not included in the predefined categories of the POPI Indian criteria. Specifically, diagnoses with at least fifteen cases in the study population but not coded according to the criteria included lower respiratory tract infections (LRTI), viral-induced wheeze, appendicitis, sepsis, soft tissue injuries, and fractures. Table 7 provides a detailed overview of these diagnoses, highlighting their frequency and characteristics. This table emphasizes the significant prevalence of these conditions within the study cohort and underscores the need for their recognition and inclusion in future updates of the POPI Indian criteria.

Table 8 : Common diagnoses in study population that are not contained in the POPI Indian criteria

S. No	Diagnosis	No. of cases in study population
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1	Sepsis	4
2	Soft tissue injury	23
3	Appendicitis	36
4	Head injury	12
5	Meningitis	5
6	Jaundice	41

The current study examined diagnostic patterns in the study population, especially those differing from the POPI Indian criteria. It provided valuable insights into unusual healthcare presentations. By analyzing common diagnoses, the study highlighted conditions that are not usually included in standard diagnostic guidelines. Among the notable findings, sepsis, a severe systemic infection, was diagnosed in 4 cases, indicating its potential to manifest in unexpected ways. Soft tissue injuries were prevalent, with 23 cases identified, underscoring the diverse spectrum of trauma encountered in clinical settings. Additionally, appendicitis, a condition often characterized by specific symptoms, presented in 36 cases, suggesting potential variations in clinical manifestation. Head injuries, with 12 cases noted, and meningitis, with 5 cases, further emphasized the complexity of neurological conditions and their varied presentations. Remarkably, jaundice emerged as the most frequent diagnosis, with a substantial 41 cases identified. This finding underscores the importance of considering broader diagnostic criteria, particularly in regions where certain conditions may be more prevalent or exhibit unique clinical features.

Overall, these findings highlight the diverse range of medical conditions encountered in clinical practice and underscore the importance of comprehensive diagnostic approaches tailored to the specific needs of each patient (Table 8). Recognizing and addressing unusual medical cases helps healthcare providers make timely and accurate diagnoses, leading to better patient outcomes and improved quality of care.

Conclusion

The present study evaluated pediatric prescribing patterns and the clinical applicability of the Pediatrics: Omission of Prescriptions and Inappropriate Prescriptions (POPI)-India criteria among patients receiving care in inpatient and emergency department settings at Aster Prime Hospital, Hyderabad, India. The study included 600 pediatric patients, comprising 450 inpatients and 150 emergency department

patients, and provided insights into patient demographics, medication utilization, clinical indications, and the relevance of the POPI-India criteria to routine pediatric prescribing practices. The findings demonstrated that younger children, particularly infants and those aged 1–5 years, constituted a substantial proportion of the study population. Pain and fever were the most frequently documented clinical indications, followed by gastrointestinal complaints, respiratory symptoms, and other infectious and non-infectious conditions. Paracetamol and ibuprofen were among the most commonly prescribed medications, while antibiotics, bronchodilators, corticosteroids, and other therapeutic agents also contributed to the observed prescribing patterns. These findings highlight the diversity of medication use and clinical presentations encountered across pediatric inpatient and emergency healthcare settings. The evaluation of the POPI-India criteria revealed that 595 of the 600 pediatric patients (99.2%) had at least one documented symptom or diagnosis corresponding to the predefined clinical categories, indicating broad applicability of the screening framework to the study population. Nevertheless, six categories were not represented among the evaluated patients. Furthermore, several clinically relevant diagnoses, including jaundice, appendicitis, soft tissue injuries, head injuries, sepsis, and meningitis, were identified outside the predefined categories. These findings suggest that although the POPI-India criteria cover a substantial proportion of commonly encountered pediatric clinical presentations, certain conditions may require further consideration to improve the comprehensiveness and contextual relevance of the assessment framework. The study emphasizes the potential value of structured prescription-screening criteria as a supportive component of pediatric medication review. However, the correspondence between patient diagnoses and POPI-India categories should not be interpreted as direct evidence of inappropriate prescribing or prescribing omissions. Further assessment of individual prescribing indicators is necessary to establish the actual frequency and nature of potentially inappropriate medication use.

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