

# ASSESSING THE PRESCRIPTION PRACTICES: A FOCUS FOR MEDICAL EDUCATION AND PATIENT SAFETY ENHANCEMENT

Naveed Afzal Khan<sup>1</sup>, Liaqat Raza<sup>2</sup>, Shafa Haider Sawal<sup>3</sup>, Abdul Jalil Khan<sup>4</sup>, Mushyyada Durrani<sup>5</sup>, Afsheen Mahmood<sup>1</sup>

## ABSTRACT

**Objective:** To assess the Prescription of medications in a healthcare facility according to the Minimum Service Delivery Standards (MSDS) of the Khyber Pakhtunkhwa Health Care Commission (KPHCC).

**Methodology:** A cross-sectional study was conducted at a tertiary care hospital in Peshawar. Records of prescriptions were collected at the pharmacy for two consecutive weeks in April 2023 (n=463 – all prescriptions). They were reviewed against the Ind 122 for medical orders of the Minimum Service Delivery Standards (MSDS) of the Khyber Pakhtunkhwa Health Care Commission (KPHCC). The pharmacist In-charge collaborated to assess the prescriptions. Observations were entered into an Excel spreadsheet for analysis.

## Results:

A total of 17 specialties were represented in the collected prescriptions. Differential diagnosis was missing from 83% of the prescriptions. The patient's age was noted in 93% of the prescriptions but weight was only noted in 39% of cases. Route of medication for administration was noted in 33% while dosage of medication was present in 100 percent of the cases.

## CONCLUSION:

Prioritizing patient safety in healthcare is crucial, and precise prescription writing is vital. Enhancing the training of healthcare professionals in prescription writing and their compliance with the guidelines is crucial to minimize the chance of medical errors. Noting the differential diagnosis is paramount for proper follow-up and audit of prescriptions.

## KEYWORDS:

Prescription, Medical Education, Medical orders, Patient safety,

## INTRODUCTION

The main goal of medical education is to improve the quality of healthcare by training good healthcare professionals. <sup>1</sup> Quality medical education is critically important to the training of competent and safe doctors. <sup>2</sup> Patient safety is the cornerstone of good medical care. <sup>3</sup> Thus, producing safe doctors is paramount for quality healthcare of any country. <sup>4</sup>

Safe practice is a broad competency that encompasses most areas of clinical practice but prescription of medications is one key aspect that needs to be highlighted. Prescriptions are perhaps the most important written communication that a doctor undertakes in his daily practice. Clear and proper prescriptions are critical to ensure that the right patient receives the appropriate medications, in the proper doses, for the right duration, and with the right instructions.<sup>5</sup>

The teaching of prescription writing in the MBBS program in Pakistan is of paramount importance as it serves as a crucial link between academic understanding and practical clinical application. The curriculum incorporates the practice of writing prescriptions into clinical training, imparting the skill to aspiring physicians. Teachers emphasize the significance of precise, readable, and uniform prescriptions to avoid mistakes and guarantee the well-being of patients.<sup>6</sup> Still, newly graduated doctors encounter a difficult issue in formulating an understandable and safe medicine prescription.<sup>7</sup>

<sup>1</sup> Khyber Girls Medical College, Peshawar

<sup>2</sup>Institute of Kidney Diseases Hayatabad

<sup>3</sup>Khyber Pakhtunkhwa Health Foundation

<sup>4</sup>Khyber Medical University, Peshawar

<sup>5</sup>Peshawar Dental College

## Address for Correspondence:

Dr. Afsheen Mahmood  
Assistant Professor – Department of  
Physiology  
Khyber Girls Medical College, Peshawar  
[afsheenmahmood66@gmail.com](mailto:afsheenmahmood66@gmail.com),  
00923469370321

A review of the prescription practices of the doctors of any healthcare facility is an important measure of their compliance with the guidelines for medical orders.<sup>8</sup> Ind 122 of the Minimum Service Delivery Standards (MSDS) of the Khyber Pakhtunkhwa (KPK) Health Care Commission (KPHCC) deals with medical orders. The healthcare facilities in KPK are required to comply with the standards set out in the MSDS criteria.<sup>9</sup>

## METHODOLOGY

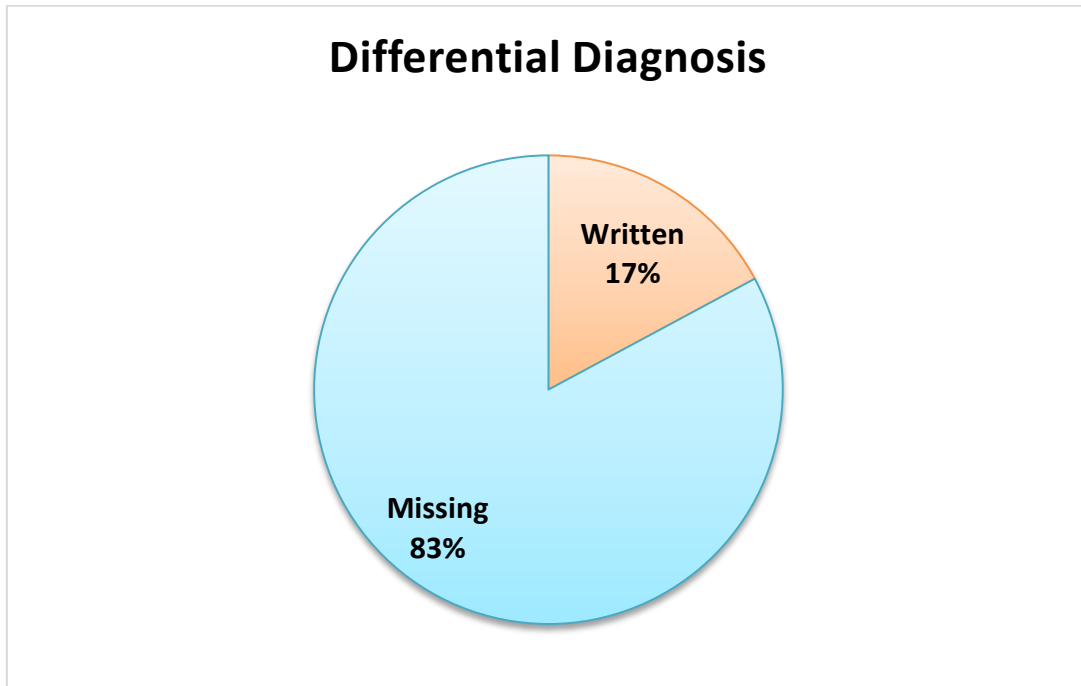
This cross-sectional study was conducted at a tertiary care hospital in Peshawar with the Objective to assess the Prescription of medications according to the Minimum Service Delivery Standards of the Khyber Pakhtunkhwa Health Care Commission. The study was approved by the hospital research and ethical committee (IREB) via approval No. 1293 dated 6/5/23. The pharmacy of the facility was chosen as the site for data collection. Records of

prescriptions were collected at the pharmacy for two consecutive weeks in April 2023. All the legible prescriptions coming to the pharmacy in the given period were included in the study (n=463 – all prescriptions). The MSDS of KPHCC was chosen as the standard against which the collected data was assessed. They were reviewed against the Ind 122 for medical orders of the MSDS of KPHCC. The pharmacist In-charge collaborated to assess the prescriptions. Observations were entered into an Excel spreadsheet for analysis. Simple statistics were used to analyze and report the data.

## RESULTS

Ninety percent of the examined prescriptions were recorded as legible. A total of 17 specialties were represented in the 463 legible prescriptions collected at the pharmacy. The results of the assessment of the n=463 legible prescriptions are outlined in Table 1.

<b>Parameter</b>	<b>Noted (%)</b>	<b>Missing (%)</b>
Patient Name	94	6
Parent Name	48	52
Age	93	7
Gender	93	7
Medical Record. No	44	56
Date	97	3
Time	47	53
Visit Number	51	49
Address	62	38
Allergies if Any	43	57
Examination Findings	81	19
Investigations	70	30
Further Plan	52	48
Weight	12	88
Drug Dosage	100	0
Route of Administration	33	67
Doctor Signature	75	25
Doctor Stamp	39	61



**Figure 2. Differential Diagnosis among the prescriptions**

Differential diagnosis was missing from 83% of the prescriptions. The age of the patient was noted in 93% of the prescriptions but weight was only noted in 39% of cases. Route of administration for the medication was noted in 33% while dosage of medication was present in 100 percent of the cases.

#### **4 DISCUSSIONS:**

Medical prescriptions are crucial in healthcare since they guarantee the administration of safe and efficient treatment. They function as comprehensive directives provided by a skilled healthcare practitioner, instructing people on the suitable drug, dosage, frequency, and length of therapy customized to their unique medical condition. Prescriptions serve the purpose of conveying crucial information to pharmacists, as well as preventing misuse, minimizing the likelihood of negative responses, and mitigating dangerous drug interactions. Ultimately, following prescribed medications contributes to improved health outcomes, emphasizing the vital importance of medical prescriptions in safeguarding patient safety and well-being.

One of the most important pieces of information missing from the prescriptions in our study was differential diagnosis as only 17% of prescriptions had noted it down. This key missing information prevents us from analyzing the treatment and its conformity to the guidelines for the diagnosed condition. It also poses a challenge in the follow-up of the patient. Altebainawi A, et. al reviewed a

thousand prescriptions in their study conducted in Saudi Arabia and reported that 47.8% of prescriptions did not contain the patient's diagnosis, and 42.4% of prescriptions did not contain the medication dose information.<sup>10</sup>

Less than one percent of the prescriptions had all the parameters noted in our data. A study conducted in the outpatient pharmacy department of a major teaching hospital in Malaysia reported that of the 397 prescriptions screened, 96.7% had one or more of the legal or procedural requirements missing. The errors of omission encompassed missing essential information on the prescriptions, such as the patient's age, date, clinic or department of issuance, mode of administration, dosage, and frequency of the drug, strength, dosage form, and quantity to be delivered.<sup>11</sup>

One of the methods employed globally to limit these missing parameters is to shift the prescription from manual writing to a software-based interface. The system prompts you to enter the parameters the doctors missed in the entry. In the United Kingdom, where the computerized physician order entry (CPOE) system is often used, a prescription mistake rate of 9-15% for drug orders of hospital inpatients is reported.<sup>12</sup>

#### **CONCLUSION**

Prioritizing patient safety in healthcare is crucial, and precise prescription writing is vital in this regard. Enhancing the training of

healthcare professionals in prescription writing and their compliance with the guidelines is crucial to minimize the chance of medical errors. Noting the differential diagnosis is paramount for proper follow-up and audit of prescriptions.

### Strengths and limitations and further direction

The study explores a key area of patient safety and medical education and highlights the need

### Author contributions

Author	Area of contribution
Naveed Afzal Khan	Idea conception, Design of the study, Data Collection, Data Analysis, and Drafting of the Manuscript.
Liaqat Raza	Idea conception, Design of the study, Data Collection, Data Analysis, and Manuscript Critical Appraisal.
Shafa Haider Sawal	Idea conception, Design of the study, Data Collection, Data Analysis, and Manuscript Critical Appraisal.
Abdul Jalil Khan	Idea conception, Design of the study, Manuscript Critical Appraisal.
Mushyyada Durrani	Data Analysis, Drafting the Manuscript.
Afsheen Mahmood	Data Analysis, Drafting the Manuscript.

for further studies in this area. A multicenter study with more resources and a larger sample size needs to be undertaken to better determine the prevalence of incomplete medical prescriptions.

**Declaration:** No grants or funding was availed by any authors for this research project.

**Conflict of interest:** The authors don't have any notable conflict of interest to declare.

### REFERENCES

- Buja LM. Medical education today: all that glitters is not gold. *BMC medical education*. 2019 Dec;19(1):1-1.
- Yeoh KG. The future of medical education. *Singapore medical journal*. 2019 Jan 1;60(1):3-8.
- Flott K, Fontana G, Darzi A. The global state of patient safety. London: Imperial College London. 2019 Sep.
- Leape L, Berwick D, Clancy C, Conway J, Gluck P, Guest J, Lawrence D, Morath J, O'Leary D, O'Neill P, Pinakiewicz D. Transforming healthcare: a safety imperative. *BMJ Quality & Safety*. 2009 Dec 1;18(6):424-8.
- MedicineWise NP. Prescribing Competencies Framework: embedding quality use of medicines into practice.
- Ameen N, Khan SP, Shaikh F, Memon Z. Curriculum-based prescription writing among undergraduate medical and dental students. *Pakistan Journal of Medicine and Dentistry*. 2014;3(03):35.
- Heaton A, Webb DJ, Maxwell SR. Undergraduate preparation for prescribing: the views of 2413 UK medical students and recent graduates. *British journal of clinical pharmacology*. 2008 Jul;66(1):128-34.
- Lim WY, Hss AS, Ng LM, John Jasudass SR, Sararaks S, Vengadasalam P, Hashim L, Praim Singh RK. The impact of a prescription review and prescriber feedback system on prescribing practices in primary care clinics: a cluster randomised trial. *BMC family practice*. 2018 Dec;19(1):1-3.
- KPHCC. Minimum Service Delivery Standards (MSDS) [Internet]. Khyber Pakhtunkhwa Health Care Commission. [cited 2023 Feb 25]. Available from: <https://hcc.kp.gov.pk/wp-content/uploads/2023/05/MSDS-for-Category-1-Hospitals.pdf>
- Altebainawi A, Aljofan M, Alrashidi MN, Alshammari TM. Completeness of medication prescriptions: prescription errors study in Hail region, Saudi Arabia (PeSHR).
- Ni KM, Siang CS, bin Ramli MN. Noncompliance with prescription writing requirements and prescribing errors in an outpatient department. *Age*. 2002;130(32.7).
- Ghaffar UB, Ahmed SM, Faraz A. A review of the frequency of medical error in Saudi Arabia: an emerging concern. *Journal of Evidence Based Medicine and Healthcare*. 2015;2(52):8692-5.