



PRESCRIPTION BASED STUDY: PREVALENCE AND TYPES OF MEDICATION ERRORS IN A TERTIARY CARE CENTRE

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ABSTRACT: Preventable medication errors have been found to be one of the most common types of preventable medication errors, affecting over 7 million people and costing approximately 21 million annually in the India alone. Of all the types of preventable medication errors, prescribing error was found to be one of the most common, with prevalence ranging from 1.5 percent to 88.1 percent. Such errors have mostly occurred during the prescribing decision or prescription writing process. Not only will this method likely result in dangerous drug reactions, but it will also likely result in inferior treatment efficacy. The aim of this study was to assess the prevalence and types of prescribing errors identified by pharmacists in an Indian public tertiary care institution. It is critical to remember that a lack of information about the patient's age and weight, particularly in paediatric patients, may result in unintended underdosing or overdosing. Illegible handwriting in prescriptions is also worth mentioning, albeit accounting for only 3.3 percent of all errors. Because poor handwriting is estimated to kill over 7,000 individuals in the India each year, measures should be made to prevent such errors, such as encouraging the use of free, user-friendly web-based prescribing tools. The findings confirm that prescribing mistake was widespread in the hospital, despite the fact that its prevalence was low when compared to that documented in the literature. Aside from that, omission and commission errors were found to be about similar in frequency. Efforts to reduce such errors, including the implementation of a system that encourages proper prescription practices, are thus necessary.

Keywords: Prevalence, Prescription Errors, Public Tertiary Care, Community medicine.

INTRODUCTION

Preventable medication errors have been found to be one of the most common types of preventable medication errors, affecting over 7 million people and costing approximately 21 million annually in the India alone. Of all the types of preventable medication errors, prescribing error was found to be one of the most common, with prevalence ranging from 1.5 percent to 88.1 percent. Such errors have mostly occurred during the prescribing decision or prescription writing process. Not only will this method likely result in dangerous drug reactions, but it will also likely result in inferior treatment efficacy. It's also worth noting that system failure, unstandardized workflow, and insufficient prescriber training are all key contributors to prescribing errors. Prescription errors have been

demonstrated to be widespread in this scenario. When compared to the manual prescribing system, computerized prescribing is more efficient. However, in India, the approach could considerably reduce such errors. The bulk of public health settings, including tertiary care centers, are not equipped with computers. The electronic prescribing system is installed. On the other hand, till this point, there is a scarcity of data on prescribing errors that occur.

Aim and objective:

The aim of this study was to assess the prevalence and types of prescribing errors identified by pharmacists in an Indian public tertiary care institution.

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Material and Methods:

In June of 2012, a four-week cross-sectional study was conducted in a tertiary care hospital. The study concept was evaluated and approved by the Medical Research and Ethics Committee before the data was collected. The screening comprised all new prescriptions received during weekdays at the central Outpatient Pharmacy Department (OPD) and two satellite pharmacy units. To record all of the information on the prescriptions,

a consistent data collection form was employed. One of five trained pharmacists confirmed the errors, which were then classed as (i) omission errors, which are defined as incomplete important information provided in a prescription, and (ii) commission errors, which are defined as erroneous information provided in a prescription. Prescriptions written in unclear handwriting were also singled out. All of the results were reported as frequencies and percentages after a descriptive analysis.

Table 1; Frequencies and Percentages of Omission Errors

Error	Frequency	Percentages
Patient's name	15	6%
Dose / strength of medication	32	12.8%
Dosage form of medication	15	6%
Frequency of medication	115	46 %
Duration of treatment	50	20 %
Quantity of medication required	20	8%
Duration of treatment	5	2%
Quantity of medication required	15	6%
Doctor's stamp	3	1.2 %
Total	250	100

Table 2: Frequencies and Percentages of Commission Errors

Error	Frequency	Percentages
Drug choice	52	34.66%
Dose/ strength of medication	20	13.33 %
Dosage form of medication	45	30 %
Frequency of medication	20	13.33 %
Duplicate medication orders	10	6.66 %
Drug interactions	13	8.66 %
Total	150	100

Results and Discussion:

Prescription mistakes were discovered in 400 (4.0%) of the 11,000 new prescriptions evaluated. The central OPD, which served a higher number of patients than the two satellite pharmacy units, dispensed the vast majority (80.4 percent) of the prescriptions. The largest rate of prescribing errors was found in the Emergency and Trauma Department (16.2%), followed by the Medical Department (11.1%) and the Dermatology Department (10.1%). (9.3 percent). Omission and commission errors accounted for 62.5 percent (n=250) and 45 percent (n=181) of the errors, respectively, while illegible handwriting was observed in 3.3 percent (n=15) of the prescriptions. The unspecified frequency (46percent), duration of treatment (2 percent), and quantity required (6percent) for a medication were the most common omission errors (Table 1), while the incorrect dosage or strength (13.3%), frequency (30percent), and dosage form (6%) for a medication were the most common commission errors (Table 1).

To our knowledge, this is the first study to establish the prevalence of prescribing errors in a public tertiary care

hospital in India and to assess them methodically. The findings may help pharmacists better understand the intensity and type of prescribing errors in India, allowing them to devise methods to reduce them. Overall, when compared to similar research, the prevalence of prescribing errors discovered in this study was relatively low. Nonetheless, it's worth mentioning that commission errors accounted for over 40% of the detected errors, which are possibly more clinically significant and could have resulted in more detrimental consequences than omission errors. Furthermore, commission errors are frequently underestimated because their detection frequently requires subjective judgement and is constrained by the prescriptions' lack of information. As a result, there is a strong need for prescribers to be more cognizant of the potential repercussions of commission errors. Furthermore, the findings indicate that omission errors were prevalent in the hospital. Although the lack of certain legally essential information, such as prescribers' stamps, may not necessarily hurt patients, it will surely slow down the dispensing procedure, causing them to wait longer in the

OPD. However, it is critical to remember that a lack of information about the patient's age and weight, particularly in paediatric patients, may result in unintended underdosing or overdosing. Illegible handwriting in prescriptions is also worth mentioning, albeit accounting for only 3.3 percent of all errors. Because poor handwriting is estimated to kill over 7,000 individuals in the United States each year, measures should be made to prevent such errors, such as encouraging the use of free, user-friendly web-based prescribing tools.

CONCLUSION

The findings confirm that prescribing mistake was widespread in the hospital, despite the fact that its prevalence was low when compared to that documented in the literature. Aside from that, omission and commission errors were found to be about similar in frequency. Efforts to reduce such errors, including the implementation of a system that encourages proper prescription practices, are thus necessary.

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