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Assessment of Relevant Information from the Prescriptions Dispensed in the Various Community Pharmacies in Calicut

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Abstract: ***Study investigated the current prescription writing practices and determined the presence of relevant clinical information in the prescriptions dispensed in the various community pharmacies in Calicut using a descriptive observational method. Legibility and completeness of prescription, prescription writing practices were assessed as per WHO guidelines of prescription completeness assessment and grading scale. Three dimensions studied for the completeness of prescription were physician information, patient informations and medication informations. A total of 158 prescriptions were collected and physician informations completeness domain assessment found that 5.7% of prescriptions lacked physician's name, 2.54% missed address and 5.07% did not have physician's signature. On assessing patient information domain, it was found that patient's weight and address were not present on 95.57% and 85.44% of prescriptions respectively. Date of writing of prescriptions was not mentioned in 3.17% cases. Assessment of medication information domain found that prescribers gave preference to the trade names (97.47%.) On assessing legibility it was found that most of the prescriptions were legible (66%). These findings have shown the need of clinical pharmacy monitoring in community pharmacy area to improve the prescription writing habits use and to give input to the healthcare to minimize the chance of errors.***

Keywords: Community pharmacy, Prescription review , Professional information, Legibility

1. Introduction

The prescription is one of the most important therapeutic transactions between physician and patient. A prescription is defined as a health care program implemented by a physician or other qualified health care practitioner in the form of instructions that govern the plan of care for an individual patient [1]. As an instruction from a prescriber to a dispenser, it is considered to be a medico-legal document that should be written legibly, accurately and completely. Prescribing physicians as well as those involved in the execution of the prescription hold legal responsibility for the prescription [2].

With the number of prescription growing every year, health professionals who write prescriptions need to be particularly cautious to avoid mishaps. Worldwide, it is estimated that over half of all medicines are prescribed, dispensed or sold inappropriately and that half of all patients fail to take their medicine correctly. Moreover, about one third of the world's population lacks access to essential medicines [3]. Prescription errors accounts for 70% of medication errors that could potentially result in adverse effects. The quality of a prescription reflects the competence of a physician and his/her attitude towards rational prescribing. However, systematic reviews suggest that prescribing errors are common and can affect from 42-82% of prescriptions. Errors can arise from any step of prescribing such as the choice of drug, dose, and route of administration and wrong frequency or duration of treatment. Inaccuracy in writing and poor legibility of handwriting or incomplete writing of a prescription can lead to misinterpretation, thus leading to errors in dispensing and administration [4]. This study was conducted to investigate about current prescription writing practices and assess the presence of relevant information in the prescriptions dispensed in the various community pharmacies in Calicut.

2. Literature Survey

Majority of the prescriptions studies has shown incompleteness where regular auditing and feedback is necessary for imbibing safe prescribing practices. A study conducted on assessment of completeness and legibility of prescriptions received at community pharmacies of rural India showed necessary to critically address and evaluate the completeness and legibility of the prescriptions in a continuous and frequent manner [5]. A study led by a private hospital in Dubai It identified deficiencies in prescribing and investigated the prescribing behavior of consultant physicians [6].

3. Methodology

The study utilized descriptive observational study design by prescription review of the randomly collected prescriptions from various community pharmacies at Calicut for a period of six months (November 2016 to April 2017). Legibility and completeness of prescription which are considered to be the major and common lacunas in the prescription writing were assessed as per WHO guidelines of prescription completeness assessment and grading scale [2].

Prescription completeness assessment and grading scale

The prescriptions were carefully analyzed for the following parameters:

- Physician's information: Hospital/clinic name, address, information on department/unit, prescriber's name, designation and signature.
- Patient's information: Name, age, sex, weight and address of the patient and date of issuing prescription.
- Medication information: Generic/brand name, strength, frequency of administration, quantity to be dispensed, route, dosage form and instructions for use of medication.

Physician's information was graded as poor to excellent as per the scores. Poor (0-1), average (1-2), good (2-3), excellent (3-4). Patient's information was graded as poor (1-2), average (2-3), good (4-5), excellent (>5). Medication information was graded as poor to excellent as per the scores. Poor (1-2), average (2-3), good (4-5), excellent (>5).

Legibility of the prescription was graded as follow:

a) Grade 1 (poor): Illegible.
b) Grade 2 (average): Some words are illegible, but prescription can be understood by a physician.
c) Grade 3 (good): Most words illegible, meaning unclear.
d) Grade 4 (excellent): Legible.

Data was analyzed on Microsoft excel and descriptive statistics was used to analyze the results.

4. Results and Discussion

A total of 158 prescriptions were collected and analyzed during the study period. Total of 800 medications were present in the 158 prescriptions analyzed which makes an average of 2 medications per prescription (minimum 1 and maximum 7). All the prescriptions were handwritten by the physicians.

Three dimensions of prescription information studied for the completeness of prescriptions were physician's information, patient's information and medication information. The prescription completeness assessment is represented in table.1.

Table 1: Prescription information completeness

Sl. No.	Information Domain	Parameters	Completeness in prescription n (%)
1.	Physician information completeness	Physician's name	149 (94.30%)
		Address of clinic	154 (97.46%)
		Physician's specialty	151 (95.56%)
		Physician's signature	150 (94.93%)
2.	Patient information completeness	Patient's name	156 (98.73%)
		Gender of the patient	49 (31.01%)
		Age of the patient	124 (78.48%)
		Weight of the patient	7 (4.43%)
		Address of the patient	23 (14.56%)
		Date of prescription	153 (96.83%)
3.	Medication information completeness	Strength of the drug	145 (91.77 %)
		Frequency of administration	144 (91.13 %)
		Quantity of drug	142 (89.87 %)
		Dosage form of the drug	119 (75.31%)
		Generic name	4 (2.53%)
		Instructions for use	148 (93.67%)
		Route of administration	137(86.70%)

Based on physician information completeness domain the study found that 5.7% of prescriptions lacked physician's name, 2.54% missed address and 4.44% did not have specialty of the physician or prescriber. Also 5.07% of prescriptions were not signed by the prescriber.

The study shows that about 4 - 6% of prescriptions lack physician's name and specialty. These could be due to the busy schedule of the physicians. Physician's identity and specialty are essential for any professional communications in concern with the prescription problems such as medication errors, clinical interventions, adverse drug reaction reporting's etc. It would be time consuming process to find the physician and move with the clarifications related to the prescription in concern. Very few prescriptions did not have the physician's signature in it. This would invalidate the prescription legally and can cause inconvenience to the patients in the future.

Assessment of patient information domain found that patient's weight and address were not present on 95.57% and 85.44% respectively. Patient's gender was not mentioned in 68.99% of prescriptions, the age was not mentioned in 21.52% of prescriptions, and date of writing prescriptions was not mentioned in 3.17% cases. Patient name was absent in only 1.27% of prescriptions.

Two prescriptions lacked the patient identity that is the patient name. Name of the patient is extremely significant in dispensing right drug prescriptions to the right person. Less than half of the prescriptions included patient's gender and address. Only 4.43% of the prescriptions had the weight of patients mentioned. This could be a major issue while calculating doses for pediatrics. Few prescriptions missed the date of prescription. This could lead to a problem while dispensing that a patient can use the prescription for multiple time. The study showed incompleteness of filling in prescriptions with age. It can create problems in pediatric dose calculation. This finding was similar to the study conducted by Manisha S. Bhosale et.al., [2].

Assessment of medication information domain showed that most of the prescribers gave preference to the trade names (97.47%) in their prescriptions. Few prescriptions missed the strength of medications 8.23% and instructions for the usage of drugs 6.33%. Frequency of administration was missing in 8.87% of prescriptions. Quantity and dosage form was not mentioned in 10.13% and 24.69%. In addition to that, most of the prescriptions were lacking with route of administration of drug (13.3%).

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The prescription completeness assessment grading found that 87% of the physician information's were under the grade of excellent and 9% were good. Most of the prescriptions fulfilling patient's information are in grade of average (59%). The completeness of medication information was in the grade of excellent 64%. The prescription completeness grading is represented in fig.1.

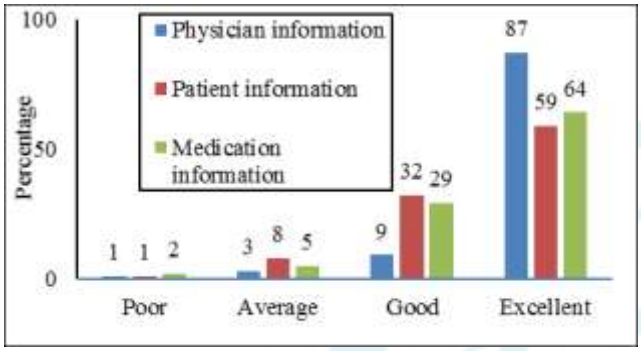

Figure 1: Prescription completeness grading

Based on legibility findings most of the prescriptions (66%) were in grade 4 (excellent), 11% of prescription were found to be in grade 2, 15% of the prescriptions were found to be grade 3 and 8% was found to be in grade 1or illegible were given in fig. 2.

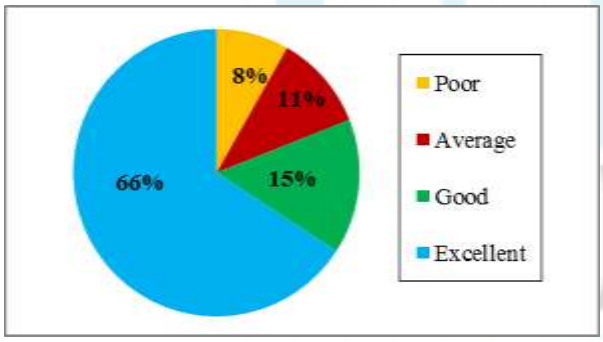

Figure 2: Legibility grading in the prescriptions

The study showed that more than half of the prescriptions were legible. Only 8% of prescriptions were under the grade of poor that might lead to misinterpretations. But this study showed lower percentage of illegibility when compared to other studies conducted by Manisha S. Bhosale et.al., [2] and Easwaran Vigneshwaran et.al., [5].

5. Conclusion

The present study observed and reported completeness of three dimensions of prescription information namely physician information, patient information and medication information. Study identified certain elements to be considered during prescription writing. The present study showed the need to critically address the legibility of prescriptions and check with the correct strength and frequency and other information on a prescription concerned with patient, prescriber and drugs to minimize the chance of medication errors.

6. Future Scope

At present, role of clinical pharmacist in community pharmacies have not progressed as compared to that in the hospitals. So, in the coming time the clinical pharmacy services should be extended to the community pharmacies in a more functional and serviceable manner.

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