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RESEARCH ARTICLE

Compliance with prescription writing at an outpatient department in Pakistan

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Abstract

Background: Although patient safety is among the foremost duties of healthcare professionals, errors in prescription can have adverse effects.
Objective: To assess prescriptions from outpatient department for compliance while prescribing according to WHO standards
Material Methods: This study included 900 prescriptions from outpatient department of a teaching hospital which were analyzed according to WHO standards for name, age, medical record number and diagnosis of the patient, along with date on the prescription, the name, strength, dose, route of the drug and the prescriber's name and signature. Data was descriptively analyzed using SPSS version 22.
Results:
20.3% were without the patient's name. 47% had age of the patient missing. More than half of the prescriptions were without the patient's medical record number. The prescriber's name was not present in 44.3% prescriptions. 6.7% did not have the dose mentioned. 3% of the prescriptions used generic names of the drugs. 80.3% had the prescriber's signature on them whereas 58.3% had a missing diagnosis.
Conclusion:
This study highlighted major deficiencies in prescription writing by medical personnel. Emphasis on compliance with WHO standards is strongly recommended, both at academic and professional levels in order to avoid adverse outcomes which affect patient's well-being as a whole.

Introduction:-

Pakistan is a developing country with only 36% population living in urban areas and literacy rate of only 54.9% in those aged above 15 years[1]. Total expenditure on health as % Gross Domestic Product (GDP) is scarcely 2.5%[2]. In this region, few people, unfortunately, get access to doctors as depicted by the physician density reported to be 0.813 physicians/1,000 population in 2009[3]. A major part of the population relies only on the prescription supplied by their physician, hence denoting its importance in their treatment as a whole. Therefore, the prescription should be legible and complete including patients' data and prescribers' initials or signature[4]. A medical prescription is an instruction from a prescriber to a dispenser for a given patient[5]. Dispenser may not always be a pharmacist but instead a

pharmacy technician, assistant or a nurse, which further increases the responsibility of the doctor to clearly and accurately prescribe the medicine.

Adverse drug events have been reported due to prescription errors. These have been seen to account for 5% of hospital admission approximately[6]. When assessed, only 1.5% of prescriptions reported contained full directions for the use of all drugs, highlighting it as a major weakness in prescription writing[4]. When causes of the prescription errors were studied most errors were found to be due to slips in attention[7].

WHO has standardized prescription writing for doctors and health care professionals[5]. In this study, we aim to evaluate compliance of medical personnel with WHO standards of completeness of the prescription.

Material Methods:-

This study was conducted in the outpatient department of a major teaching hospital in Karachi, Pakistan, between the period of June 2015 to December 2015. The study involved retrospective screening of prescriptions received in the pharmacy of the OPD in the study period. 936 prescriptions were analyzed, out of which 36 prescriptions were illegible, hence excluded. A prescription would be marked as illegible if two or more of the researchers were unable to read the prescription.All prescriptions from the outpatient department were analyzed irrespective of specialty or sub-specialty clinics.

Prescriptions were assessed for the presence or absence of the following parameters on basis of their completeness with regards to WHO standards: Name of the patient, Age of the patient, Date of prescription, Medical Record Number, Diagnosis, Drug's Name, Strength of the Drug, Dose of the Drug, Appropriateness of dose according to Age of the patient, Frequency of the Drug, Route of the Drug, Prescriber's name and Prescriber's signature.

Simple descriptive statistics were obtained from the data that was entered and analyzed using SPSS program version 22.

Results:-

Our study was done in the out-patient department of a teaching hospital in Karachi, Pakistan over a period of 6 months, 900 prescriptions were collected from the pharmacy of the hospital and evaluated according to the guidelines of WHO. In looking for biodata of the patients, 717 (79.70%) were addressed with their names and 477 (53%) had their age mentioned. 594 (66%) of the prescriptions were dated and the medical record number that is assigned to every patient for the future reference of their file was present in only 315 (35%) of the prescriptions (Figure 1).

The diagnosis of the patient was seen in 375 (41.7%) of the prescriptions. Drug name, strength and dose of the drug was present in 375 (41.70%), 900 (100%), and 669 (74.30) of the prescriptions respectively. Although only 3% of the drugs prescribed were along with their generic name. 432 (48%) of the prescriptions had the dose of the drug that was appropriate with the age of the patient. Frequency with which drug had to be administered with its route was present in 432 (48%) and 651 (72.30%) of the prescriptions respectively. prescriber's name was present in 501 (55.7%) and signature was seen in 723 (80.3%) of the prescriptions (Table 1).

Discussion:-

In our developing country where literacy rate is low at 54.9% according to UNICEF and Pakistan ranked 199 in the world at literacy rate. According to WHO doctors are legally obliged to write clearly[5] as medication error are directly related to adverse drug effects[8]. Where bad prescribing habits lead to unsafe and ineffective treatment of the patient it also leads to prolongation of illness, distress and increase in cost of the treatment for the patient and their family. In a study conducted in South India looking for prescription errors in patients who were receiving treatment for cancer chemotherapy by Mathaiyan Jet al[9] in 11% of the prescription potentially harmful errors were seen that would lead to serious consequences. In our society where generally prescription writing is taken for granted and guidelines are ignored as pointed out by Minaa Tahir et al[10] where Prescriber's Perception, Knowledge and Attitude towards Prescribing Error was evaluated and 92.5% were not found to be following any guidelines and 70.5% considered that prescription errors do not occur.

In our research were 900 prescriptions were evaluated according to the guideline of WHO in out-patient department of a teaching hospital at Karachi.

In our study 79.9% of prescriptions were addressed by name of the patient and 53% had age mentioned on them, in a similar study conducted in Malaysia by KuanMun Ni el al[11] had name of patients in all of them and age was mentioned in 67.3% of the assessed prescriptions. In another similar study conducted in Saudi Arabia by Y.M. Irshaidet al[12] name and age were found in 94.6% and 77.3% respectively. Whereas when prescription writing quality was evaluated in France patient identification was found to be complete in only 35.3%[13].

Date on the prescription is crucial for future references of the treatment of the patient in follow-up plus for convenience of the patient and avoiding of mixing up of prescription, a medical record number is assigned by the hospital to the patient for maintenance of their record and follow-up. When date and entrance of medical record number of patients was evaluated, date was found to be present on 66% while medical record number was found in only 35% of the prescription. In a study conducted in Peshawar in 2014 by Usman Ahmed Raza et al[14] date was found to be not present in 6.9% of the prescriptions. In study conducted in Saudi Arabia by Y.M. Irshaidet al[12] date on the prescription was provided in only 35.7%.

Prescriber's name and signature were found to be present in 55.7% and 80.3% respectively in prescriptions of patients in our study. When comparing our study with the one conducted by Y.M. Irshaidet al[12] The name and signature of the prescriber were included in 83.3% and 81.9% of prescriptions, respectively. While in the study conducted in France by François Pet al[13] prescriber's full name and signature was found to be present in only 7.5% of the prescription.

When studying the prescriptions for the drug 97% of drugs were prescribed by its brand names and only merely 3% used the generic name of the drug. This when compared with the study done by Shaughnessy AFet al[15]in US one third of the prescriptions had generic names of the drug on them. Similarly in the study done in SA generic name of the drugs were used in 15.1% of the prescriptions[12]. When we compared our result with the study conducted in Ethopia by Desta Zet al[16] generic name of the drug was used in 82.9%.

Strength, dose of the drug and frequency with which it had to be administered was present in 41.70%, 100%, and 89% of the prescriptions respectively in our study, this when compared with the study of Y.M. Irshaidet al[12] in 52.8% of the prescriptions the strength and in 19.4% frequency of the drug was missing. This is crucial in prescription writing as it also lead to over dosing or under dosing of the drug and hinder hugely in the treatment of the patient. Comparing our results with the study done in Peshawar dosage and duration of the drug was missing in 63.8% and 55.4% of the prescriptions respectively[14].

In another similar study conducted in Nepal by Ansari M[17] et al form of dosage, dose and frequency and route of administration of the drug were not mentioned in 12%, 19%, 10% and 63% of the prescriptions respectively. in a study conducted in Columbia by Machado-Alba JE et al[18] where hospital medical errors were evaluated, 20% of the errors were seen only due to the transcription errors. With the large number of prescribing errors, in a study done by Seidling HM[19] et al fraction of error-free prescriptions increased by 12.9 % from 52.9 % when intervention was done by introducing electronic prescribing and teaching sessions.

Figure 1: Compliance with WHO prescription writing standards

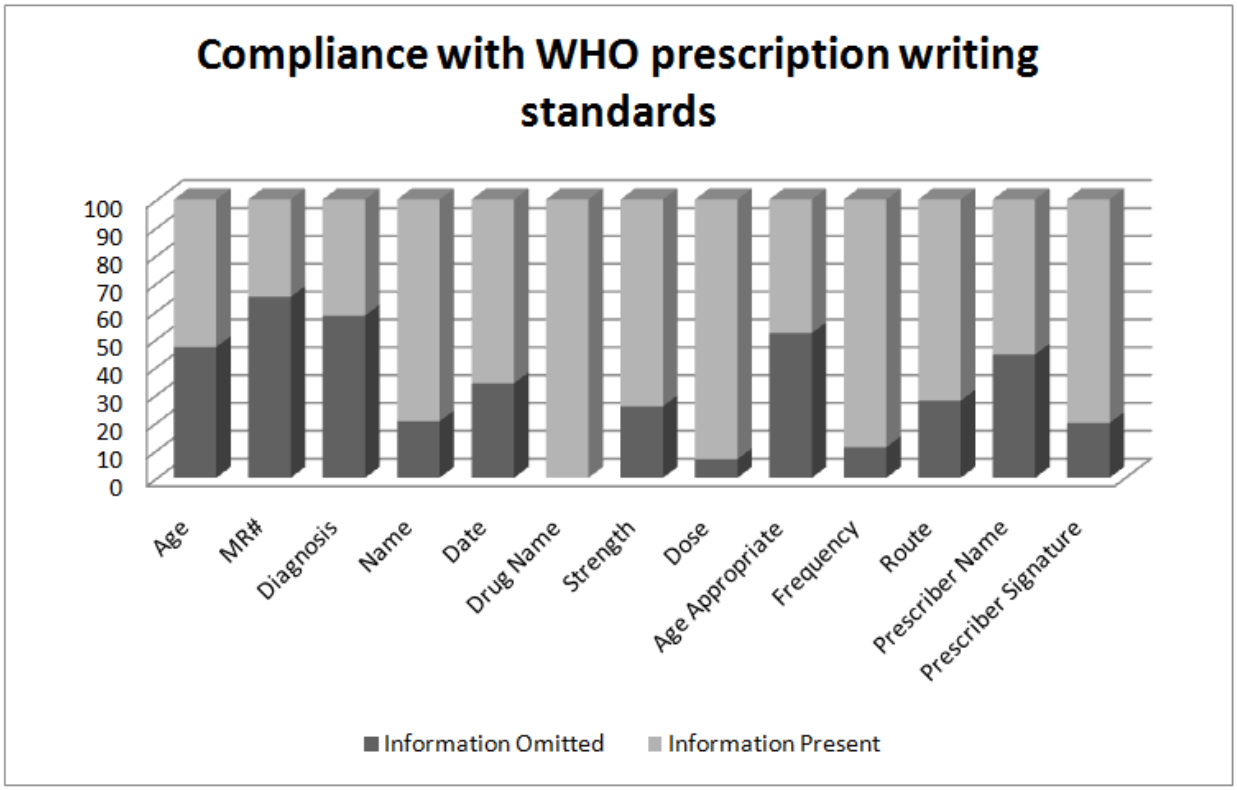

Table 1 : Table showing the number and frequency (in percentages) of the description present on the prescriptions

S #	Description On Prescription	Number on prescription	% on prescription
1	**Name of Patient**	717	79.70%
2	**Age of Patient**	477	53%
3	**Date of Prescription**	594	66%
4	**Medical Record Number**	315	35%
5	**Diagnosis**	375	41.70%
6	**Drug Name**	900	100%
7	**Strength of Drug**	669	74.30%
8	**Dose of Drug**	840	93.30%
9	**Appropriateness of Dose according to Age**	432	48%
10	**Frequency of Drug**	801	89.00%
11	**Route**	651	72.30%
12	**Prescriber's Name**	501	55.70%
13	**Prescriber's Signature**	723	80.30%

Conclusion:-

Doctors from our region tend to have a low compliance of good prescription writing, inciting the medical committee's responsibility over the issue and need for addressing the problem at all levels of medical education including students, doctors and pharmacists.

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