



WHO Indicators and its Compliance by General Practitioners of Lahore, Pakistan

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Abstract

Prescribing pattern is also important factor to identify the problems related to prescribing and best tool to improve the quality of prescription and patient care. The aim of current study was to evaluate the quality of prescription and prescribing practices as per WHO drug core indicators in Lahore, Pakistan. A descriptive and cross-sectional study was carried out to access the prescribing pattern in Lahore, Pakistan. A sample of 300 prescriptions were collected from well-known Pharmacies and hospitals located in Lahore, Pakistan. A Structured data collection form was designed. The standard world health organization (WHO) drugs core prescribing indicators were used to determine the prescribing pattern of physicians. Data was analyzed using IBM SPSS V21.0. The name of patients was mentioned 93% of total prescriptions. While age and sex mentioned on prescriptions were 67% and 53% respectively. Only 22% prescriptions were containing patient weight description. 32% of total prescriptions were mentioned prescriber address. 16% of total prescriptions were containing patient address. While 60% of total prescriptions were mentioned specialization of prescribers. The total numbers of drugs prescribed on all encounter was 1122. The average number of drugs prescribed per encounter was 3.74 (optimal value 1.6-1.8). The total number of drugs prescribed under generic name was 0% (optimal value 100%). Antibiotics were 42.5% of total drug prescribed (optimal value 20-26.8). Injections were 19.25% of prescriptions (optimal value less 10%). Prescription writing is a tough task. The results of current study show a poor compliance rate of legal requirement required for prescription writing. Most of prescribers were deviated from standard guidelines. There is a need to improve the knowledge about prescription writing and prescribing practices. Continuous education is required to ensure the rational prescribing at Lahore, Pakistan in future.

Key words: Prescribing, Antibiotics, WHO, Rational prescribing, Compliance, Drug core indicators.

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1. Introduction

Irrational prescribing is worldwide problem. Wrong prescription pattern leads to ineffective, unsafe treatment, prolongation of illness, harm to patient and increase the cost of therapy [1]. Irrational prescribing ultimately increasing the morbidity, mortality and financial burden on patient [2].

Irrational use of drugs always leads to severe adverse effects on pharmaceutical care, health care cost. Other negative impacts to increase the drug-drug interactions, increased risk of ADR and noncompliance of patient to treatment [3]. Irrational use of medicine always leads to chronic disease such as, diabetes, hypertension, Epilepsy and neurological disorders [4]. It is important to realize that inappropriate use of drugs lead to potential

hazards to patients and unnecessary expense [5].

Appropriate use of drugs is important to provide better medical care and health to individual patient and to whole community [6]. DUE play a vital tool for analysing the rational use of drugs with focusing social, economic and medical impact on society [7].

Drug utilization pattern helps to study the prescribing patterns, drug interactions and rational use of medicines [8]. Drugs always play important role in health care system. Availability of drugs is major factor to implementation and improves proper utilization of health services [9]. The quality of life in developing system can be improved by enhancing standards of basic medical treatment. To promoting rational use of drugs in developing countries must follow the WHO drug core indicators [10]. The prescription is an important transaction between patient and doctor [11]. A standard set of drug core indicators that help to assess to identify the problems, clinical, economically to exposing inappropriate drug use [12].

No one knows about origin or sign of prescription. It is derived from “Eye of Horus” “the symbol used by ancient Egyptians shown in figure.1. This sign was worn by Egyptians to



A



B

Figure 1. (A) Eye of Horus. (B). sign of Prescription.

give them strength of sun and maintained their good health.

The appropriate prescribing depends upon the pathophysiology of problem and pharmacology of drugs available to treat it [13]. A prescription is a written medication order by a practitioner to a pharmacist to compound and dispense a specific medication for a patient. It is considered a legal document which is accurate and completed. A good quality of prescription is very important for minimization of drug errors [14]. Prescribing is a very tough task required different skills Diagnosis skills, Knowledge of medicine Understanding the pharmacology Communication skills [15]. Prescribing pattern is also important factor to identify the problems related to prescribing and best tool to improve the quality of prescription and patient care [16]. An ideal prescription must carry necessary information such name, age, sex, diagnosis and condition [17]. Patient receives medication appropriate to their clinical needs in doses that meet their own individual requirement for an adequate period and lowest cost to them and their community” [18]. There are four basic components of rational prescribing which followings are, Maximum clinical outcome, Minimum harms, Minimum cost, Respect patient choice [19].

2. Materials and Methods

2.1. Study Setting

The study was carried out in the Lahore district of Punjab province of Pakistan. Lahore is the 2nd largest city in terms of population. Its population has increased from 4.145 million to 11.126 million in 2017.

2.2. Study Design

A descriptive and cross-sectional study was conducted to evaluate the prescribing pattern of general physicians. A total 300 encounters were collected for study.

2.3. Data Collection

The standard prescribing drug core indicators form designed by world health organization (WHO) was used to collect the data. The data was collected during months of May and June 2017.

2.4. Statistical Analysis

Statistical package for social sciences (IBM SPSS version 21.0) was used to analyze the results. Descriptive statistics such percentages (%) and frequencies (N) were calculated.

3. Results and Discussion

A total of 300 encounters were evaluated during study period from June, 2016 to July, 2016 from different pharmacies and hospitals located in Lahore, Pakistan. Majority of prescriptions included patient name. None of prescription included the patient history of allergy. The name of patients was mentioned 93% of total prescriptions. While age and sex mentioned on prescriptions were 67% and 53% respectively. Other information mentioned in table 1.

Table 2 shows information regarding prescriber mentioned on prescription. 32% of total prescriptions were prescriber address while 60% of total prescription mentioned specialization of prescribers. Signatures were mentioned only 56% of total prescriptions. 89%

Table1. Patient information mentioned on prescription.

Patient Information Mentioned	Frequency	Percentage
Name	279	93%
Age	201	67%
Sex	159	53%
Weight	66	22%
Diagnosis	123	41%
History of allergy	0	0%
Address	48	16%

Table 2. Prescriber information mentoned on prescriptions.

Prescriber information	Frequency	Percentage
Address	96	32%
Specialization	180	60%
Signature	147	49%
Date	267	89%
License number	0	0%

Table 3. Prescription essential elements.

Prescription Elements	Frequency	Percentage
Superscription	162	54%
Inscription	300	100%
Subscription	72	24%
Signatura	222	74%

prescription was mentioned with issuing date of prescription. None of any prescription mentioned the license number of prescribers.

The superscription was present on 54% of total prescriptions. The inscription was only element present on 100% of total prescription; other elements are shown in table 3.

The total number of drugs prescribed was 1122. The average number of drugs prescribed per encounter was 3.74. The total number of drugs prescribed under generic name was 0%. Other indicators are shown in table 4.

This study was first time conducted in Lahore, Pakistan to investigate the quality of prescription writing, evaluation of prescription elements, and rational use of drugs using WHO prescribing drugs core indicators. The study shows that there are some deficiencies in prescribing writing and rational use of drugs. The study was conducted to evaluate the extent to which practitioners follow the WHO guidelines for prescribing drugs. In current study the name of the patient was mentioned 93% of total prescriptions which is higher than

Table 4. WHO Drug core prescribing indicators.

WHO prescribing indicators	Total drug of encounters	Mean/ Percentage	WHO criteria
Average number of drugs per encounter	1122	3.74	1.6-1.8
Percentage of drugs under generic name	0	0	100%
Percentage of antibiotics prescribed	477	42.5	20-20.8
Percentage of injections prescribed	216	19.25	Less 10%

the study [20] conducted study at different community pharmacies 91.3% and [21] reported 66.25% and lower than study conducted by [22] was 96% and [23] was 94.6%. The name must be mentioned on every prescription to avoid any complication regarding patient record keeping in hospitals. The omission of patient name from prescription can cause certain problems regarding patient identification. The percentage of age and sex was present in current study 67% and 53% respectively. This was higher than the studies carried out other different countries Saudi Arabia and palatine [19], and other cities of Pakistan.

The age and weight should be mentioned on prescription. In case of child and older patient there is need to reduce the dose and proper therapeutic drug monitoring required in case of narrow therapeutics drugs. Proper diagnosis also mentioned by prescriber to avoid any error regarding drug prescribing. History of allergy also mentioned on prescription.it helps to prevent any adverse effect regarding antibiotic

sensitivity. patient address also presents every prescription in case of any drug dispensing error or other emergency pharmacist can call to patient [21]. The finding of current study regarding prescriber information mentioned on prescription the address of prescriber stated on prescription was 32%. It was higher than study reported 9.6% [24] in Saudi Arabia and lower than the study conducted by [25] 88.6% in Nabulus, palstine.it was also lower than study conducted by [26] 72.25% in Karachi, Pakistan. Specialization of prescriber stated on our study was 60%. It was lower than study reported by [19]86.1% in Nabulus, palatine. The signature and date were present in our study 56% and 89% respectively. The percentage of signature of current study was lower than study reported 85.5% [27] and higher than study reported 34.75% [28]. The percentage of date mentioned on prescription was higher than studied reported from palatine and Saudi Arabia. the proportion of license number of prescribers was equal to the study reported from palatine and lower than the study reported from Karachi,

Pakistan. The date and signature must be mentioned on every prescription to avoid rifling before time and maintain the narcotics recorded and avoids misuse of blank prescription without prescriber signatures.

The result of our study was compared with the other one conducted in south Punjab, Pakistan [21]. The percentage of superscription in our study was 54%, that was lower than the study reported by Imran et al (69.4%) and the inscription was 100% in our study. It was equal to study reported by [21] (100%). In current study the subscription was only 24% that was lower than the one reported by Imran et al (85.4%). The percentage of signature in our study was 74% that was lower than the study reported by [29] (89.4%).

The superscription must be present on every prescription. It is sign of practice. If this part of prescription is omitted from prescription, it doesn't consider prescription by law. Illegal writing and same name of brands and generic can cause a problem for pharmacist to dispense a drug. This part of prescription must be clear and accurate. Subscription part also mentioned on prescription to avoid medication errors. The most important part of prescription signature, patient must know about medication dose, quantity of medication, how to take the medication timing of medication. omission of this part also leads to patient compliance and medication errors [21].

The drug core prescribing indicators recommended by world health organization (WHO) was developed to measure the extent of polypharmacy, tendency to prescribe the antibiotics and prescribing of drugs under

generic name. Regarding the average number of drugs per encounter also evaluate the degree of polypharmacy. The value found in current study 3.74 was higher than WHO reference range (1.6-1.8). Similarly, other studies reported from other countries like India 3.37, and 3.31 and Iran 3.34. This value is lower than studies reported from Nepal 9.8 and Bangladesh 4.89. The proportion of drugs prescribed under generic name in current study is very low as compared to WHO limit (100%) the percentage of generic prescribing in current study was 0%. This figure was very low as compared the studies reported from other countries India 5.9% and 1.5%, Nepal 84%. The percentage of generic prescribing in Bangladesh is equal to current studies. Our study shows that the prescribers are not aware of importance of generic prescribing. Prescribing under generic may be promote the rational use of drugs, reduce the cost of therapy and cost effective to community. The percentage of antibiotics prescribed by prescriber in current study was 42.5% [30] which higher than the WHO recommended range (20-26.8). This value is greater than study reported from Nepal 18% and Bangladesh 15.95%. Similarly, this value is lower than the other countries studies reported from 49%, 45% and Iran 51.25% [31].

The irrational use of antibiotics in developing countries leads to resistance to antibiotic efficacy. other factors related to prescriber also considered major cause of antibiotic resistance like lack of knowledge, inappropriate diagnosis and selection of drugs [32]. The proportion of injection prescribed is

also higher than the limit recommended by WHO (less 10%) the findings of current studies 19.25% was higher than the recommended limit. This figure was higher than studies reported from other countries India 4.9% and 4.8% this range within limit of WHO prescribed range and Bangladesh 17.18%. It is lower than as compared studies reported from Nepal 30% and Iran 49.25% [33]. Irrational use of injection leads to spreading infections, serious toxicities and also enhanced the cost of drug therapy.

4. Conclusion

Prescription writing is a tough task. The results of current study show a poor compliance rate of legal requirement required for prescription writing. Most of prescriber deviated from standard guidelines. There is dare need to improve the knowledge about prescription writing and prescribing practices. E-Prescription can also enhance the quality and clarity of prescription also reduces medication error. Clear and comprehensive guideline should be formulated to improve the prescription quality.

Current study also reveals that prescribing trend among practitioners were found to be unsatisfied, poor compliance of drug core prescribing indicators, over prescribing of antibiotics, injections, polypharmacy and low level of generic prescribing. We also recommend to Government authorities to developing the national treatment guidelines and national formulary to encourage the generic prescribing trend among practitioners and promote the rational use of drugs. We also

recommended to ministry of health (MOH) to appoint the clinical pharmacist in health care system to promote the rational use of drugs and prevention of medication errors. Additional improvement required to implementation according world health organization (WHO) through conducting different trainings and work shop's for prescribers to improve the prescription writing quality and rational use of drugs.

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