

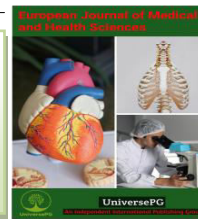


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Prescribing Pattern of Medical Practitioners in Their Private Chamber Practice According to WHO Prescribing Indicators in a Southern District of Bangladesh

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ABSTRACT

Prescription is a written order and instruction by a registered physician to the pharmacist for the specific use of a drug product for a patient. The aim of the study was to observe the prescription pattern of doctors in their chamber practice according to World Health Organization (WHO) prescribing indicators. A total of 300 prescriptions of outdoor patients from various departments of different private chambers of medical practitioners were collected from 1st August to 31st October 2019 and were evaluated. After evaluation and data analysis we got, patients' age and gender were not mentioned in 6% prescriptions. Dose and course of treatment were incomplete in 60%, 72% and 52% of prescriptions respectively. Abbreviations were used in 100% prescriptions. Doctor's medical registration number was mentioned in 13% prescriptions only. Total 1042 drugs were prescribed in 300 prescriptions. The average number of drugs prescribed was 3.38±1.79 (Mean±SD). Most of the prescriptions contained a brand name (93.33%) of the drugs whereas only a few (6.7%) used the generic names (P<0.05). Antibiotics and injections were ordained in 64% and 8% cases respectively. Approximately 60% drugs were prescribed according to the Essential Medicine List (EML) of Bangladesh. Our study has shown that very few physicians are acquainted and follows the WHO standard of prescribing which can lead to serious negative health consequences. Moreover, the presence of antibiotics in two-third of all prescriptions should ring an alarm to prevent its aberrant use.

Keywords: Rational prescribing, Private practitioner, Prescribing indicators, Pattern, and WHO.

INTRODUCTION

Prescription is written medico-legal document by authorized person for the treatment of patient where

each prescription should contain all the four elements, superscription, subscription, inscription and signature with registration number issued by medical council

(Sampling to Study Drug Use, WHO, 2000). In superscription, information of doctor (qualification, address) and patient (name, age, sex address) as well as date of prescription are included (Uddin *et al.*, 2014). The subscription of a prescription includes to the information of prescribed drugs such as dosage form, drug name, dose, number etc. And in inscription directions for the use of drug are mentioned. Finally, signature of the registered medical practitioner with their registration number at medical council should be written as last element of prescription. All prescription orders should be clearly written by prescriber so that it can easily communicate between pharmacist and patient. Prescribing errors can be observed if sufficient and necessary information are not mentioned in prescription (Lesar *et al.*, 1997)

Prescribing errors causes the irrational utilize of drugs and reduce patient compliance (Fijn *et al.*, 2002). Study by Kuo *et al.* described that 70% prescribing errors was noticed among USA family physicians while study managed at West England reported that 43.8% prescriptions accommodate one or more prescribing errors (Kuo *et al.*, 2008; and Seden *et al.*, 2013). Study carried out at Nasik, India described that out of 300 prescriptions 279 prescriptions (93%) were irrational based on the utilize of essential drug WHO and standard treatment guidelines (Chaudhari *et al.*, 2011). Prescribing is a complex task requiring diagnostic skills, knowledge of medicines, an understanding of the principles of clinical pharmacology, communication skills, appreciation of risk and uncertainty (Khan and Ara, 2011). Irrational use of medicines is a global problem and common finding, particularly in developing country like Bangladesh. Poly-pharmacy, unnecessary use of antimicrobials, over use of injections and vitamins are commonly evident (Islam *et al.*, 2020). On the other hand, aggressive drug marketing, lack of information drug use and inadequate drug supply has been suggested to be the main causes behind the irrational prescribing (Begum *et al.*, 2012).

The high cost of prescribed drug causes problems in developing countries like Bangladesh. This problem can be minimized by prescribing drugs by generic

name and selection of drugs from essential medicine list (Sharif *et al.*, 2019). Generic drugs are substitute of branded drug without any patient protections with similar efficacy but 40 to 60% cheaper than branded drugs (Siddarth *et al.*, 2014). Irrational drug use leads to reduction in the quality of drug therapy, wastage of resources, increased treatment costs, increased risk for adverse drug reactions and emergence of drug resistance (Rahman *et al.*, 2019). According to WHO prescribing indicators includes number of drugs prescribing per prescription, percentage of drugs prescribed by generic name, percentage of encounter by injection and antibiotics prescription and percentage of drugs prescribed from EML.

MATERIALS & METHODS

Samples of prescriptions (by private practitioners) were collected from patients randomly. Prescriptions were collected either by photocopying or scanning by Smartphone after taking informed written consent from respective patients. A total of 300 prescriptions were the study sample. We had carried out Z-test. Variables were described as numbers and percentages. $P=0.05$ was considered as statistically significant. The Statistical Package for Social Sciences (SPSS) version 20.0 was used to analyze data.

Prescriptions were not categorized according to patients' details like age, sex or disease profile. Afterwards all prescriptions (300) were analyzed using the WHO indicators. Following parameters were analyzed- a) Average numbers of drugs per prescription, b) Percentage of drugs prescribed by generic name, c) Percentage of prescriptions with an antibiotic prescribed, d) Percentage of prescriptions with an injection prescribed, and e) Percentage of drugs prescribed from essential drug list.

RESULTS

Patients' descriptions such as age and gender were not found in 6% prescriptions. It was evidenced that dose, direction of drug and duration of treatment was not completely mentioned in 60%, 72% and 52% of prescriptions respectively. Abbreviations were used in 100% prescriptions. Doctor's medical registration number was mentioned in 13% prescriptions. Total

1042 drugs were prescribed in 300 prescriptions. Average number of drug prescribed was 3.38±1.79 (Mean±SD).

Brand name was used in 93.33% prescriptions and generic name in 6.7% prescriptions. Use of antibiotics and injections was 64% and 8% respectively.

Table 1: Analysis of prescription according to WHO prescribing indicators (n=300)

WHO prescribing indicators	Prescription analysis
Average number of drugs per prescription (Mean±SD)	3.38±1.79
Percentage of drugs prescribed by generic name	6.67%
Prescribed by brand name (in %)	93.33%*
Antibiotic prescribed (in %)	64%
Injection prescribed (in %)	8%
Prescribed from essential medicines list (in %)	60%
* p< 0.05 significantly compared to generic name by Z-test	

DISCUSSION

300 prescriptions were analyzed by using some of the WHO indicators. According to that analysis our study revealed that there was not fully complete prescription was found. Patient’s names, address, date of prescription were mention in 100% prescriptions. Similar to report showed by Siddarth *et al.*, where it was 99.3%. Gender, age and address of patient were missing in 6% the prescriptions similar to study conducted at Maharashtra¹⁴ while Siddarth *et al.*, reported that in 33% and 0.7% prescriptions address and gender were missing. Study conducted at Ethiopia (Desta and Abdulwhab, 1996) and Dubai (Sharif *et al.*, 2008) reported that age, gender were not mentioned in 36.6%, 18.6% and 9.7%, 12% respectively which was higher as compared to our study. In this study, on an average, 3.38 drugs were prescribed per prescription, which was 3.81 in a study conducted in 2009 and 3.24 in another study conducted in 2011 (Rahman *et al.*, 2009 and Paul *et al.*, 2011).

In an Indian study, the average number of drugs in a prescription was 3.128. In the current study, only 0.20% drugs were prescribed under generic names but Paul *et al.*; and Alam *et al.* reported it to be 0.13% and 1.33% respectively (Paul *et al.*, 2011; and Alam *et al.*, 2011). In an Indian study it was 4.24%, which was 44% in Nepal study (Kafle, 1992). In our study 64% prescriptions were prescribed with antimicrobials. This finding is quite similar with the study Rahman *et*

al., 2009, where the result was 72.50%. In the study, about 64% of the drugs were prescribed from the Essential Drug List. Paul *et al.*, 2011 and Baqui and Choudhury have reported that respectively 48.35% and 49% of prescribed medicines were from EDL (Paul *et al.*, 2011). About 8% prescriptions contained an injection which was almost similar with the study done by Saurabh *et al.* About 60% prescriptions were provided with proper instructions regarding drug dosing, formulation and duration, which was 70% in the study of Rahman *et al.*

On the other hand only 6% prescriptions contained proper instructions about patient medication information and advice like side effects of the prescribed drugs, other relevant advice and follow up of the patients (Shahen *et al.*, 2019). These patient medication information parameters were 17.5% in the study Paul *et al.*, 2011 and 35.68% prescriptions follow the proper instructions about prescription format. Irrational prescribing is a habit that is difficult to cure. However, prevention is possible. Intervention is needed to improve prescribing behaviors of doctors such as short problem based training course in pharmacotherapy and rational use focused workshops can improve prescription behavior and skills (Vries *et al.*, 1995; and Thomas *et al.*, 1997). Clear and comprehensives rules should be formulated and implemented by the government to ensure rational prescribing.

CONCLUSION

Bulk of the prescriptions we studied, failed to meet WHO standard and antibiotics were surprisingly the commonest prescribed medication compared to other group of drugs. Although it is not a large scale study, our study reflects these two prescribing issues that need to be addressed. We advocate proper monitoring of good prescribing practice and strict regulation of antibiotic use policy in private chambers of medical practitioners throughout the country to enhance optimum patient care.

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CONFLICT OF INTEREST

The authors declare that they have no conflict of interests to publish the present research work.

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