

Original Article

Audit of Typical Prescription Format Among The Prescribers of a Garment Medical Centre In Bangladesh

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ABSTRACT

Objective: To audit the typical prescription or general format according to WHO guidelines for good prescription writing. **Materials and methods:** A cross-sectional descriptive study was conducted after collecting data from medical records to observe standard of prescriptions and identify factors underlying inappropriate prescription writing. **Place and period of study:** A total of 300 prescriptions of the patients (garment workers) who had attended in Hannan Textile and Garment Medical Centre, Board Bazar, Dhaka, Bangladesh in between January and November'2008 were considered for analysis. **Results:** Audit of the prescription pattern revealed that most of the prescriptions did not conform to the pattern of a typical prescription. The patient's identity was mentioned in all prescriptions (100%). Date of the prescription and superscription symbol (Rx) were also mentioned in all prescriptions (100%). Inscription which includes name of the drug, dosage form and total amount of medication prescribed was mentioned in all prescriptions (100%) but dose and duration of treatment were mentioned in 66% and 70% prescriptions respectively. In this study, about 91.67% instructions to the pharmacist and 50% special instructions to the patient regarding the dosage form and total amount to be dispensed were found adequately. Almost 100% of the prescriptions adequately mentioned the dosage schedules and also precautions/warnings about the drug therapy. Almost 100% of the prescriptions were signed by the doctors mentioning their full name, address with qualification and registration number. But telephone/mobile number of the doctors was not found in all prescriptions (100%). Most common diagnosis among garment workers was ARI (19.33%). Most commonly prescribed group of drug was antiulcerant (17.13%) and most commonly prescribed antibiotic was amoxicillin (13.67%). Most of the drugs were prescribed in oral form (97.77%). No single drug interaction (0%) was found in any prescription. The fixed dose-drug combinations (FDCs) accounted for 67% drugs prescribed. The most commonly FDC was multivitamin and multimineral which was not included in essential medicine list (EML). **Conclusion:** Large numbers of prescriptions did not conform to ideal pattern and lack in their rationality. This study revealed a lot of scope for educating the prescribers to improve prescribing practices.

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Introduction

Prescription order is an important transaction between the physician and the patient. It is an order for a scientific medication for a person at a particular time. It brings into focus the diagnostic acumen and therapeutic proficiency of the physician with instructions for palliation or restoration of the patient's health¹.

Good prescribing is an art that is not easy to master. Good prescribing, otherwise called rational prescribing, simply means prescribing the appropriate drug in the correct dosage of an appropriate formulation, at the correct frequency of administration and for the correct length of time^{2,3}.

The conference of experts on the rational use of drugs, convened by the WHO in Nairobi (Kenya) in 1985, defined that

“The Rational Use of Drug (RUD) requires that patients acquire medications appropriate to their clinical needs, in doses that meet their own requirements, for an adequate period of time, and at lowest cost to them and their community”.

Rational use of drugs is based on “Rule of Right”.

“The right drug given to the right patient at the right time with the right doses”.

They should also fulfill SANE criteria

S- Safety

A- Affordability

N- Need to the community and

E- Efficacy.

Irrational prescribing is a habit, which is difficult to change. Appropriate drug use by patients and adherence to instruction given by the prescriber is an integral part of successful rational drug use programme. Patient's non adherence to the prescribed treatment is a global problem. The reasons for poor compliance could be lack of instructions provided with the prescription⁴.

Now-a-days the prescription format is changing and it has become just an indication of medicine with some instructions of doses without considering its rationality⁵.

A guideline for writing a good prescription involves specifying the patient's full name, address, age, with or without case number or registration number; indicating clearly the date

and the name of the drug using the approved or generic name rather than the proprietary or brand name; specifying precisely the strength of tablets, capsules or mixtures; indicating the dose frequency and total quantity to be supplied or the duration of treatment; not leaving large blank spaces on the prescription; and signing the prescription and indicating one's name and if possible one's address^{1,6}.

The screening of prescriptions and intervention process commences with the pharmacist's initial assessment for completeness and legality of the prescriptions. Prescription deficiencies formed a large proportion of errors identified in prescription screening⁷. This is mainly due to the attitude of some prescribers who are always in a hurry and hence unwilling to spend a little more time in writing clear and complete prescriptions. However, the extra time spent on the prescription will help to ensure that the patient receives the treatment that is intended by the prescriber. Additionally, the prescriber will be well compensated for the extra time taken by not having to answer enquiries from the pharmacist⁸. Productivity is linked with many factors, but worker's health is considered to be one of the most important. A worker tends to perform better if he/she is healthy. The health status of garment workers depends mostly on their access to treatment and availability of healthcare facilities. In Bangladesh, however, treatment and healthcare facilities are very inadequate in garment factories⁹.

Keeping all these facts in consideration, the present study has been planned to define the pattern of prescription writing in a garment medical centre (Hannan Textile and Garment, Board Bazar, Dhaka) of Bangladesh having onsite treatment facility.

It may also help the clinician to take appropriate measure for the improvement of prescribing patterns and to prevent prescribing errors and thus promote rational use of medicines.

Methodology

A cross-sectional descriptive study was carried out at the Hannan Textile and Garment Medical Centre, Board Bazar, Dhaka, Bangladesh. The study was carried out over a 10 months period from January' 2008 to November' 2008.

Prescriptions were collected randomly. Necessary data were obtained from a total of 300 prescriptions. The most important requirement was that the prescription be clear. It should be legible and indicate precisely what should be given. The local language was preferred.

The following details were analyzed on the prescription form:

- Patient’s identity/Patient’s demographic: Name, age, gender, address.
- Date on which the prescription was issued.
- Superscription symbol: Rx meaning “take thou” or “recipe”.
- Inscription which includes the name of the drug (The International Nonproprietary Name of the drug should always be used), dose/strength, dosage forms, route of administration, frequency of administration, total amount of medication prescribed and duration of treatment.
- Subscription: The dispensing and compounding instructions to the pharmacist as regards to form and quantities to be dispensed / supplied.
- Transcription/signature: The direction to the patient for use of drugs (preferably in local language).
 - b.i.d, t.i.d, o.d etc.
 - Precautions / warnings regarding drug/therapy.
- Prescriber’s identity: Name, address, telephone/mobile number, qualification, registration number and signature.
- Most common diagnosis.
- Most commonly prescribed groups of drugs.
- Most commonly prescribed antibiotics.
- Prescription of different dosage forms of drugs.
- Any drug interactions.
- Use of fixed dose-drug combinations (FDCs).

The data was expressed as percentage, mean and total numbers.

Results

A total of 300 prescriptions of 300 patients were considered for analysis.

The findings pertaining to prescription format

Table I: Rational Prescription Format

Contents of prescription	Number of prescriptions (%)
Date of prescription:	300 (100)
Patient identity:	
Name	300 (100)
Age	300 (100)
Gender	300 (100)
Address	300 (100)
Superscription symbol (Rx):	300 (100)
Inscription:	
Name of the drug	300 (100)
Dose/Strength	198 (66)
Dosage forms	300 (100)
Route of administration	300 (100)
Frequency of administration	300 (100)
Total amount of medication prescribed	300 (100)
Duration of treatment	70 (23.33)
Subscription:	
Instructions to the pharmacist	275 (91.67)
Special instructions to the patient	150 (50)
Transcription/signature:	300 (100)
Prescriber’s identity:	
Name	300 (100)
Address	300 (100)
Telephone/mobile number	00 (00)
Qualification	300 (100)
Registration number	300 (100)
Signature	300 (100)

are shown in Table-I which shows-

Date of the prescriptions issued found in all prescriptions (100%).

Patient’s identity: Name of the patient, age, sex and address were found in 100% of the prescriptions.

Superscription symbol (Rx) was also mentioned in 100% of the prescriptions.

Inscription includes name of the drug, dosage form and total amount of medication prescribed were mentioned in all prescriptions (100%) but dose and duration of treatment was mentioned in only 66% and 70% prescriptions respectively.

Subscription: In this study, about 91.67% instructions to the pharmacist and 50% special instruction to the patient regarding the dosage form and total amount to be dispensed were found adequately.

Transcription or signature: Almost 100% of the prescriptions were adequately mentioned

regarding the dosage schedules and also precautions/warnings about the drug therapy.

Prescriber's identity: Almost 100% of the prescription were signed by the doctors with mentioning their full name, address with qualification and registration number. But telephone/mobile number of the doctors was not found in all prescriptions (100%).

Diagnosis: Most common diagnosis among garment workers was ARI (19.33%) and PUD (18.67%) (Table- II).

Table II: Most common diagnosis

Diagnosis / Clinical features	Number of cases (%) N = 300
ARI	58 (19.33)
PUD	56 (18.67)
Pain	56 (18.67)
Anorexia and generalized weakness	41 (13.67)
Fever	20 (6.67)

Groups of drugs: Most commonly prescribed groups of drugs were antiulcerents, NSAIDs and antihistamines 17.13%, 15.85% and 11.38% respectively (Table- III).

Table III: Most commonly prescribed groups of drugs

Groups of drugs	Number (% of total) N = 940
Antiulcerants	161 (17.13)
NSAIDs	149 (15.85)
Antihistamines	107 (11.38)
Multivitamines and multimineral	71 (7.55)
Calcium preparations	59 (6.28)

Prescription of antibiotics: Most commonly prescribed antibiotics were amoxicillin, metronidazole and doxycycline 13.67%, 11.33% and 7.33% respectively (Table- IV).

Table IV: Most commonly prescribed antibiotics

Antibiotics	Number of prescriptions (%)
Amoxicillin	41 (13.67)
Metronidazole	34 (11.33)
Doxycycline	22 (7.33)
Ciprofloxacin	18 (6.00)
Gatifloxacin	17 (5.67)

Dosage forms of drugs: Most of the drugs were prescribed in oral route (97.77%) (Table- V).

Table V: The routes of administration of drugs

Routes of drug administration	Total drugs (%)
Oral	919 (97.77)
Topical	21 (2.23)
Injection	00 (0.00)
Inhalation	00 (0.00)

Drug interaction: No single drug interaction (0%) was found in any prescription.

The fixed dose-drug combinations (FDCs) accounted for 67% drugs prescribed (Table- VI).

Table VI: The Fixed Dose-Drug Combinations

Combinations	Number of prescriptions (%)
Included within EML	
Vitamin B complex	52 (17.33)
Aluminium hydroxide + Magnesium hydroxide	36 (12)
Oral rehydration salts	03 (01)

Excluded from EML

Multivitamine + Multimineral	69 (23)
Calcium + Vitamin D	54 (18)
Hydrocortisone + Miconazole	07 (2.33)

Discussion

Drug prescriptions form a very important point of contact between the health care provider and the user. It also provides an insight into the nature of health care delivery system¹⁰.

Prescription errors are very common^{11,12}, especially with fresh doctors¹³. The basic problem which contributes to the irrational prescribing is that the medical students were not adequately instructed¹⁴.

Date of was mentioned in 100% of prescriptions. In many countries like Bangladesh, the validity of a prescription has no time limit, but in some countries pharmacists do not dispense drugs on prescriptions older than 3 to 6 months¹⁵.

Patient's identity includes name of the patient, age, sex and address were found in 100% of the prescriptions as they were already printed on the garment medical centre cards. Superscription symbol (Rx) was also found in 100% of the prescriptions.

Patient's non adherence to the prescribed treatment is a global problem. The reason for poor compliance could be lack of instructions provided with the prescription, low literacy and poor dispensing practice. Patients should be actively involved in the therapeutic encounter and treatment, because it is the patients who decide whether to go ahead with treatment or not. The patients should get doubtless unbiased information about the drugs they take viz; dosage, purpose, frequency of administration, duration of therapy etc¹⁶. Omission of these parameters in a prescription can contribute to inappropriate medication use resulting toxicities, treatment failures, dispensing errors, medication errors and drug resistance¹⁷.

In this study, name of the drug, dosage form and total amount of medication prescribed was mentioned in all prescriptions (100%) but it was evident that about 66% of prescriptions did not mentioned dose of the drug. Among them, mostly were FDCs. It was also found that about 70% prescriptions did not mentioned duration of therapy. The reason behind that may be in case of prescription of antipyretic, antihistamines,

analgesics, ORS, antiemetics in patients with fever, running nose, pain, loose motion, vomiting respectively and advised these drugs as if necessary (SOS).

A prescription is an instruction from a prescriber to a dispenser. The prescriber is not always a doctor but can also be a paramedical worker, such as a medical assistant, a midwife or a nurse. The dispenser is not always a pharmacist, but can be a pharmacy technician, an assistant or a nurse. Every country has its own standards for the minimum information required for a prescription and its own laws and regulations to define which drugs require a prescription and who is entitled to write it¹⁵.

In this study, about 91.67% instructions to the pharmacist and 50% special instruction to the patient regarding the dosage form and total amount to be dispensed were found adequately.

Almost 100% of the prescriptions were adequately mentioned regarding the dosage schedules and also precautions/warnings about the drug therapy.

The prescriber's name, address and telephone/mobile number is important because this will allow either the patient or the dispenser to contact the prescriber for any clarification or potential problem with the prescription¹⁵.

Writing of the doctor's registration number is also mandatory because our study place was not a hospital OPD¹⁸.

Almost 100% of the prescription were signed by the doctors with mentioning their full name, address with qualification and registration number. But telephone/mobile number of the doctors was not found in all prescriptions (100%).

Analysis of prescription data revealed that ARI (19.33%), PUD (18.67%) and pain on various sites (18.67%) were most common diagnosis/clinical features that explain the greater use of antihistamines (11.38%), antiulcerants (17.13%) and NSAIDs (15.85%).

Among the total number of drugs prescribed, most of them were prescribed by oral route (97.77%) and only 2.33% was in topical route but none of drugs (0%) were prescribed by other routes such as inhalation and injection. This is a good sign for a prescription because inhalational and injectable drugs increase cost of treatment,

difficult procedure and may also increase chance of infection through parenteral route.

A drug interaction may result in harmful or beneficial effect. However, harmful effects are usually predominated. In this study, this is also a good sign for a prescription that there was no single drug interaction (0%) was found in any prescription.

In this study, out of 300 prescriptions about 201 prescriptions (67%) were FDCs. The FDCs most commonly used was multivitamin and multimineral (23%) which was not included in EML and Vitamin B complex (17.33%) which was included in EML. The use of FDCs out of the EML is one kind of irrational practice and this practice may be usually done for the purpose of patient's satisfaction. The over and inappropriate use of FDCs may increase incidence and variety of adverse effects, increase cost of treatment and may also emergence of drug resistance and increased chance of superinfection in case chemotherapeutic agents. The results obtained after auditing the prescriptions indicate that majority of the prescribers did not adhere to the ideal pattern of the prescription writing.

Conclusion

Anomalies were noted in some of the prescriptions. Improving rational prescription writing is a complicated issue because many factors influence prescribing behaviour, such as guidelines, physician's knowledge, patient's knowledge and habits, patient's satisfactions, prescriber's economic conditions, organizational setting, the supply system, regulations and drug information systems¹⁹. Educational interventions to improve prescribing for doctors at different levels may be required.

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