Prescribing Pattern in the Outpatient Department in a Teaching Hospital in Bangladesh

*Gani MA,[1] Das RK,[2] Parveen F,[3] Saha SK,[4] Ahmed AU,[5] Afrose R,[6] Sultana S,[7] Das S[8]

In Bangladesh virtually all the drugs are available without prescription and self medications are highly common. Moreover inadequate supply of essential drugs, substandard quality, uncontrolled drug prices and inappropriate uses of drugs are major problems. This analytical cross-sectional study was carried out among 300 prescriptions collected from the individuals attending the OPD of Medicine, Surgery and Gynaecology & Obstetrics from July2011 to June 2012 in Mymensingh Medical College Hospital, Mymensingh, Bangladesh to find out the patterns of prescriptions using WHO/INRUD indicators. The demographic details, average number of drugs per prescription, percentage of drugs prescribed by generic names, percentage of encounters with an antibiotic and an injection prescribed, percentage of drugs prescribed from Essential Drug List (EDL) of Bangladesh were noted. There were average 3.01 drugs per prescriptions. Drugs were prescribed generic name only in 15 prescriptions. About 27.7% drugs were prescribed from essential drug list. Antibiotic were prescribed in 50% of prescription. Not a single prescription of injection prescribed was found. Fixed dose combination of various drugs (33.3%) were found in current study. Percentage of drugs actually dispensed and adequately labels were found to be 33.25% and 0 % respectively. Percentage of encounters with an antiulcerant, a NSAID and a multivitamin and multimineral prescribed were 33.33%, 33.33% and 30% respectively. The finding revealed a trend towards inappropriate prescribing. Hence, there is a need for effective intervention programme to encourage the physicians.

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Key words: Prescription, pattern, hospital, drug

Introduction

The availability of essential drugs (medicines considered indispensable for the treatment of a disease) and the affordability of the common people are crucial for the successful functioning of any health system.[1] The approximate total pharmaceutical market size in Bangladesh is about 436 million USD per year of which about 95% of the total requirement of medicines is created by the local companies and the rest 5% is imported. There are 246 licensed pharmaceutical factories in Bangladesh, six of them are owned by multinational companies producing about

1. **Dr. Muhammad Abdul Gani, Assistant Professor of Pharmacology, Shaheed Syed Nazrul Islam Medical College, Kishoreganj, Bangladesh, ganidr24@gmail.com*
2. *Dr. Rajesh Kumar Das, Assistant Professor of Physiology, Shaheed Syed Nazrul Islam Medical College, Kishoreganj, Bangladesh. rkdasmmc@yahoo.com*
3. *Professor Dr. Feroza Parveen, Professor of Pharmacology, Greenlife Medical College, Dhaka, Bangladesh.*
4. *Dr.Shyamal Kumar Saha, Associate Professor of Pharmacology, Mymensingh Medical College, Mymensingh, Bangladesh.*
5. *Dr.Aftab Uddin Ahmed, Associate Professor of Pharmacology, Shaheed Syed Nazrul Islam Medical College, Kishoreganj, Bangladesh.*
6. *Dr.Rafika Afrose, Assistant Professor Department of Pharmacology, Community Based Medical College, Mymensingh, Bangladesh*
7. *Dr. Safia Sultana, Assistant Professor Department of Microbiology, Shaheed Syed Nazrul Islam Medical College, Kishoreganj, Bangladesh*
8. *Dr. Sujit Das, Assistant Professor Department of Paediatrics, Shaheed Syed Nazrul Islam Medical College, Kishoreganj*

**For correspondence*

10.4% of the local production. Locally produced drugs meet 93.4% of the local drug demand in Bangladesh. In the past, and particularly during 1980s, the essential drugs list of Bangladesh included some 200 products. The list has been enlarged in the 1990s.[2] Unethical drug promotion and marketing of substandard and unnecessary drugs in Bangladesh were very common before 1982. Instead of producing essential drugs, most drug manufacturers manufactured non-essentials such as vitamins, tonics, enzymes, gripe waters and cough mixtures. To stop these practices, Bangladesh formulated a pioneering National Drug Policy (NDP) in 1982.[3] The Drugs (Control) Ordinance, 1982, was promulgated subsequently to implement the NDP. The principal objectives of the NDP were to make available essential drugs; ensure good quality drugs; control drug prices; ensure rational use of drugs; develop an effective drug monitoring system; improve the standard of hospital and retail pharmacies; and ensure good manufacturing practices.[4] In Bangladesh, the National Drug Policy (NDP) 1982 was instrumental in improving the supply of essential drugs of quality at an affordable price, especially in the early years. An essential drugs list (EDL), approved by the Government, initially identified 150 drugs with controlled prices. Due to the policy of buying raw materials from international competitive markets under the new policy, the prices of essential drugs fell sharply in the subsequent years. During 1981-1991, the retail prices of drugs increased by 20% in the local market[5].Evidence showed that essential drugs were not often available, especially in the government health facilities. Besides, the irrational use of drugs, such as over-prescribing, prescribing of multiple drugs, use of unnecessary expensive drugs, and overuse of antibiotics and injections were observed.[6,7]The concept of essential medicines has also been adopted by many international organizations, including the United Nations Children's Fund (UNICEF) and the Office of the United Nations High Commissioner for Refugees (UNHCR), as well as by non-governmental organizations and international non-profit supply agencies[8].The selection of essential medicines is only one step towards the improvement of the quality of health care; selection needs to be followed by appropriate use. Each individual should receive the right medicine, in an adequate dose for an adequate duration, with appropriate information and follow-up treatment, and at an affordable cost. Worldwide more than 50% of all medicines are prescribed, dispensed, or sold inappropriately, while 50% of patients fail to take them correctly. Moreover, one-third of the world's population lacks access to essential medicine[9]. To ensure rational and appropriate use of drugs in Bangladesh was another prime concern of the NDP. But no study has yet been undertaken in this regard[10]. Clinically inappropriate and inefficient use of medicines is a serious problem. More than half the medicines in Bangladesh are inappropriately prescribed, dispensed or sold[11].The medical practitioners need to keep themselves updated through attending seminars, conferences, and other continuing professional development programmes. These programmes should not be supported by pharmaceutical industries, as often there is conflict of interest. They should look for independent publications or drug information centers for drug-related information, but not from the pharmaceutical representatives. Finally, they should take care of their patients, by spending some time with them explaining the appropriate use of prescribed medicines.

Methods

This Analytical cross sectional study was conducted from July 2011 to June 2012 among the patients attending in Surgery, Medicine, and Gynecology out patient

department of Mymensingh Medical College Hospital, Mymensingh, Bangladesh. This period included the time for selection of study places seeking permission from the appropriate authority, collection of prescriptions and other information, editing, compilation, tabulation, analysis of data and report writing. Non probability purposive type of sampling technique was applied. The interviews were held discretely in the corridor just outside the medical outpatient department, and data was recorded on predesigned WHO forms. The data for the "prescribing indicators" was recorded by scrutinizing the prescription immediately after the patient-prescriber encounter.

Results

Three hundred prescriptions were analyzed during the study period the average number of drugs per prescription was 3.01 and the range was from 1-7. The drugs were prescribed by brand names in cases of 882 drugs (97.78 %.) and by generic name in 20 cases (2.21%). Hundred of the 902 drugs prescribed were combination preparation and 27.71% of the drugs prescribed were from the essential drug list of Bangladesh.

Most of the patients (40%) came from low income group. It was also observed that 38.33% came from middle income group and 21.67% came from High income group.

Table I: Socioeconomic status of patient

Status	Group	Monthly Income	Number of patients (%)
Status I	Low	<5000Tk.	120 (40%)
Status II	Middle	5000-10000Tk.	115 (38.33%)
Status III	High	>10000 Tk.	65 (21.67%)

Table II: Average number of drugs per prescription

OPD	Total number of drugs	Average drug per prescription
Medicine	300	3.00
Surgery	297	2.97
Gynaecology & Obstetrics	305	3.05
Total	902	3.01

Table III: 10 commonly prescribed antibiotics

Antibiotics	Number of prescriptions (%)
Ciprofloxacin	40 (15.33)
Azithromycin	38 (12.67)
Cefuroxime	30 (10)
Metronidazole	18 (6)
Amoxicillin	12 (4)
Levofloxacin	09 (3)
Cefixime	08 (2.67)
Flucloxacillin	06 (2)
Cephradine	05 (1.67)
Ofloxacillin	05 (1.67)

A total of 902 individual drugs were prescribed for 300 drug encounters, giving an average of 3.01 and the average number of drugs per prescription was found to be highest (3.05) in the Gynaecology & Obstetrics OPD.

Table IV: Age-wise prescribing frequency for chosen drug categories.

Age group (No. of patients)	Anti-hypetensives	Oral hypoglycemics	Antibiotics	Antiulcer drugs	Analgesics	Anti-histamin	Anti-asthmatic
<20 n=70	0(0)	0(0)	50(71.4)	14(20)	23(32.85)	24(34.28)	3(4.29)
20-29 n=100	1(1%)	0(0%)	70(70%)	35(35%)	32(32%)	8(8%)	4(4%)
30-39 n=60	2(3.33%)	0(0%)	37(61.67%)	22(36.67%)	22(36.67%	7(11.67%)	3(5%)
40-49 n=29	2(6.90%)	0(0%)	17(58.62%)	10(34%)	10(34%)	1(3.44%)	1(3.44%)
50-59 n=27	2(7.41%)	0(0%)	17(62.96%)	10(37%)	10(37%)	5(18.51%)	1(3.70%)
60 & above n= 14	1(7.14%)	1(7.14%)	9(64.28%)	9(64.28%)	8(57%)	1(7.14%)	1(7.14%)

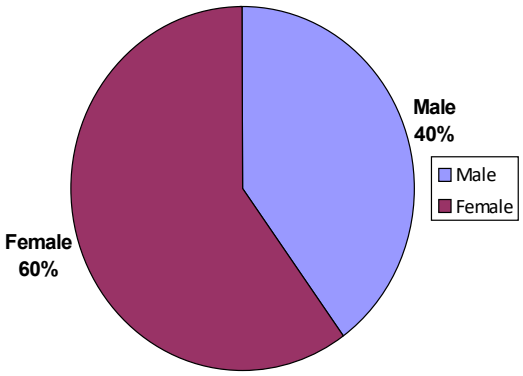

Figure 1. Percentage of male and female

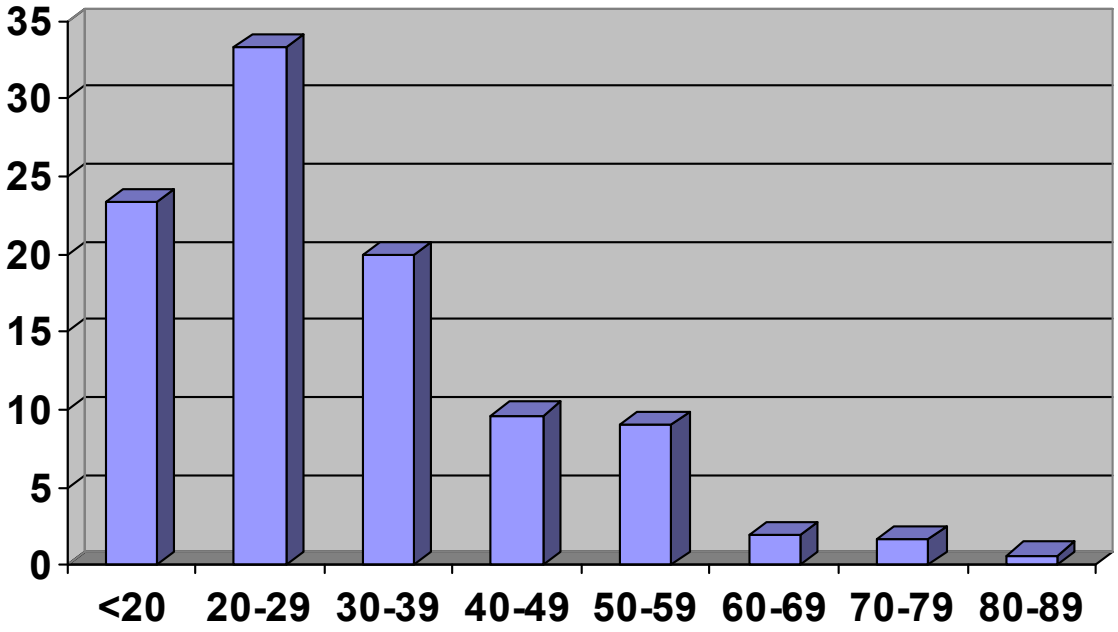

Figure 2. Age distribution of patients

The age group 20-29 years accounted for the highest number 33.33% and more than 90 years of age accounted for the lowest number 0.33% of patients.

Discussion

A prescription by a doctor may be taken as a reflection of physicians attitude to the disease and the role of drugs in its treatment. It also provides an insight into the nature of the health care delivery system. There was an uneven gender distribution with predominance of females (male to female ratio 1:1.5 among patient given drugs) at the MMCH out patient department. This predominance of female patient was not in agreement with the result of other studies in developing countries. One f the explanations of this finding may be due to curving of male prepared caring practices in Bangladesh.[12] The age distribution of the patient showed that young patient 20-29 years constituted the highest number (33.33%) visiting the OPD which was comparable with the results in a study in Nepal.[13] Current study figure 3.01 drugs per encounter is higher than the recommended limit of 2.0. Similar findings have been reported in other Indian studies and from Burkina Faso, Cambodia, Ethiopia, Ghana, Morocco, Nepal, Nigeria, Pakistan, Tanzania, Zimbabwe (2.2 to 4.8 drugs per prescription).In the present study three or more drugs were prescribed in 64% of the prescriptions which increase the risk of drug interactions, of dispensing errors and of the patient not knowing the dosage schedules. In creasing generic prescribing would rationalize the use and reduce the cost of drugs. The current study figure is 6.67%, which is very much less than that reported in other studies conducted in Cambodia, Ethiopia, Tanzania.[14]

Conclusion

This analytical cross sectional study revealed that despite all the efforts taken by the government and the WHO, the pattern of prescription in terms of completeness and rationality remains poor. Special attention needs to be given to out patient department where significant irrational prescribing in terms of polypharmacy and relative absence of the directions about the use of drugs was evident.

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