Orginal Article

Analysis of Prescription Pattern Among Private Practitioners of Rajshahi Metropolitan City

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Abstract

Background: *Now a days our country has improved remarkably in all sectors of health care facilities. But still patients compliance is poor. Though the private practitioners claim higher fees, their practice in writing prescription is controversial. Therefore the present study was designed to evaluate the traditional prescriptions done by registered medical practitioners with that of standard prescription models.*

Methodology: *A cross sectional type of descriptive study was conducted to evaluate the prescribing pattern of the different category of private practitioners practicing within Rajshahi Metropolitan area from 1st November, 2014 to 1st April, 2015. The study was conducted by focusing on the practitioners' prescription layout or mechanics of prescription order writing and the prescribing indicator part of the WHO core drug use indicators. After completion of collection, all the data were coded as well as analyzed by SPSS version 17.*

Results: *Data were collected from 300 patients, 3 patients from each practitioner. Within the superscription part, gender and weight of patients were mentioned only in 1% and 12% of the prescriptions, subscription or direction to the pharmacists was not present even in a single prescription. Follow up advices were found only in 30% of prescriptions and registration numbers of the physicians were mentioned only in 15% of the prescriptions. According to the prescribing indicator, the average number of drugs per encounter was 4.38 and 0% drugs were prescribed by generic name. 13.3% of encounters were with an injection prescribed, only 29.05% drugs were prescribed from EDL (Essential Drug List) of Bangladesh.*

Conclusion: *Standard prescription prescribed by the practitioners was not satisfactory. So the private practitioners should be more aware about the writing of prescriptions in a proper way.*

Keywords: *WHO, Prescribing pattern, Private practitioners, Rajshahi Metropolitan.*

Introduction

A private practitioner is a medical practitioner who provides primary health care and specializes in family medicine. A general practitioner treats both acute and chronic diseases and provides preventive care by giving health education to the patients of all ages and both sexes. They have particular skills in treating people with multiple health problems and co-morbidities[1]. Traditionally, private practitioners are split into two major groups in aspect of our country situation: General Private Practitioner and Specialized private practitioner on basis of their degree obtained and the posts they are holding in any tertiary care or teaching hospital either in government or in private sector. The practitioners involved in government services, practice in their private chambers when they are out of their duty time. There are another group of practitioner who are not involved in any job, neither in government nor in private hospitals or clinic, but only practicing at their own chamber and thus providing health care to the patients. They may hold various nationally or internationally recognized post graduation degrees, obtained from medical colleges and universities of this country or from abroad and sometimes they may also be only graduated practitioner. So far the services are concerned; the private sectors are recognized to be far better than the public sector in most developed as well as developing nations[2].

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Prescriptions has been used since earliest times for the management of patients[3]. The content of a prescription includes the name and address of the prescriber and other legal requirement such as registration number. Patients name is unique for each prescription. The patient's name and address must also be noted. Date of consultation must be mentioned and some authorities may place a time limit on each prescription[4].

Prescriptions have legal intimations, as they may indicate that the prescriber takes responsibility for the medical care of the patient and in particular for monitoring efficacy and safety. As medical practice has becoming complex day by day, the scope of meaning of the term "prescription" has widened also to include clinical assessments, laboratory tests, and imaging studies related to optimization of the safety or efficacy of medical treatment. An improperly written prescription may lead to inefficient and unsafe treatment, exacerbation or prolongation of illness, sufferings and harm to the patients and higher price[5]. Worldwide more than 50% of all drugs are prescribed, dispense or marketed inappropriately, while 50% of patients fail to take them correctly[6].

Now a days practice in writing prescription has been controversial[7] and required the need for regular self, unit or pharmaceutical audits[8,9] to observe the prescription writing pattern, intensity and deficits. All the evidences suggest that no physicians either in public or private sector follow the standard prescription pattern rules. Thus the usefulness of medicine prescribing by the doctors is in debet which could not be ignored.

Materials and Methods

Study design: It was a Cross sectional descriptive study.

Sample size: 300 prescriptions containing antimicrobial drugs from 100 private practitioners: 3 prescriptions from each practitioner.

Tool development: In this study purpose structured checklist and prescribing indicator form were developed. The checklist consists of all parts of prescriptions with specific parameters. The other tool was prescribing indicator form by WHO core indicators. The checklist was used to observe the parts of prescription to assess if the prescriptions are following the standard prescription format or not and the WHO core prescribing indicators were used to investigate rational drug use in the private chambers. These tools were selected as they were proved effective in previously conducted studies in other countries.

Method of data collection: After tool development field visits were conducted to collect data. 100 Physicians were selected randomly by lottery. Then the addresses of their private chambers were enlisted and located. The prescriptions were collected from the patients shortly after their visit to the doctors by taking photos of those prescriptions. Some prescriptions were also collected from in front of the dispensaries after the patients purchasing of their prescribed drugs.

Data analysis: After collecting the prescriptions (raw data), all data were converted in usable form by considering them according to the checklist. The usable forms were maintained in files and on completion of field visit the data were coded to enter in the SPSS software. SPSS 17.0 version was used for data entry and analysis. After data analysis results were find out according to objectives, study results were presented in the form of tables, chart, graphs and description of the key findings according to need.

Details of each prescription were analyzed as per the following parameters.

- Demographic characteristics of the doctors involved
- The mechanics of prescription order writing
- WHO core prescribing indicator

Results

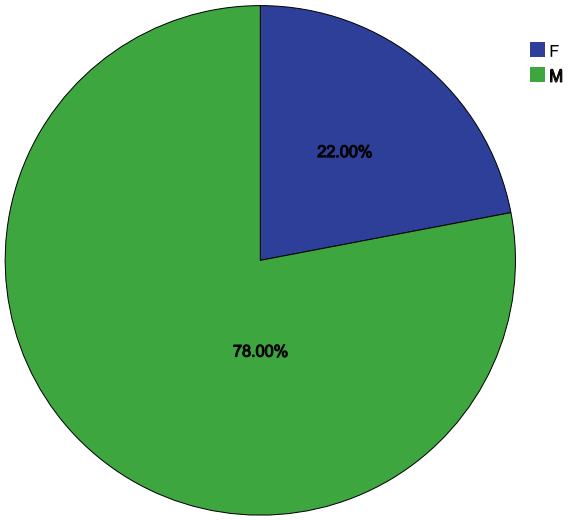

Fig. 1: Percentage distribution of male and female doctors (N=100)

Prescriptions were collected from a total of 100 doctors practicing in Rajshahi Metropolitan city. Among the doctors 78% were male and 22% were female. (Fig. 1)

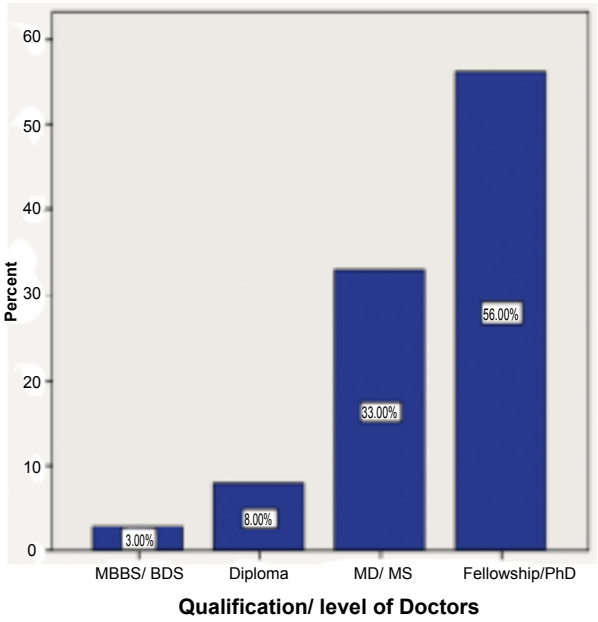

Fig. 2: Histogram showing Ratio of Qualification status of Doctors

Among 100 doctors, 3 (3%) were MBBS/BDS degree holder, 8 (8%) were diploma degree holder, 33 (33%) were MD/MS degree holder and 56 (56%) were Fellowship degree holder either from Bangladesh or from abroad. (Fig. 2)

Table I: Showing WHO core drug prescribing indicators

No. of Indicator	WHO core drug use indicator (Prescribing)	Findings
1	Average no. of drugs per prescription	4.38
2	% of drugs prescribed by generic name	0.0
3	% of encounters with an antimicrobial prescribed	100
4	% of encounters with an injection prescribed	13.3
5	% of drugs prescribed from EDL of Bangladesh	29.05

Among total 300 prescriptions, WHO core prescribing indicators were observed and results found were as shown above. As only antibiotic prescribed prescriptions were collected, so percentage of prescriptions with an antibiotic was 100 %. (Table I)

Table II: The routes of drugs prescribed among private practitioners

Serial No.	Routes of drug administration	Total drugs	Percent (%)
1	Oral	1134	86.23
2	Topical	78	5.93
3	Injection	76	5.77
4	Inhalation	17	1.29

The routes of drug administration prescribed are shown in Table II. The oral dosage form accounted for 86.23% of drugs while 5.93% was prescribed in the topical form. Uses of injectables were 5.77% and only 1.29% drugs were prescribed in inhalational form.

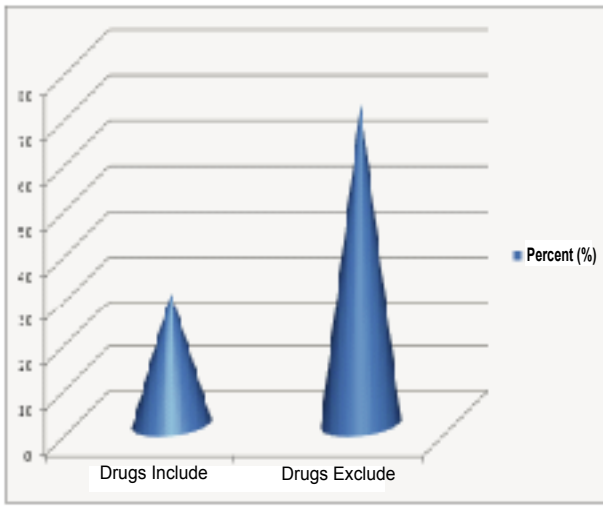

Fig. 3: Distribution of drugs prescribed from essential drug list (EDL) of Bangladesh

The percentage of drugs prescribed which included or not included from EDL are shown in Fig.3. Only 382 drugs (29.05%) out of 1315 drugs in 300 prescriptions were prescribed from the Essential Drug List (EDL) of Bangladesh and the majority of drugs 933 (70.95%) were prescribed other than EDL of Bangladesh. (Fig. 3)

Table III: Showing comparison (%) of the mechanics of prescription order writing

Parameters	Comparison in Particular item	Present (No. of Pres.)	Percent (%)	Absent (No. of Pres.)	(%)
Superscription	Date Issued	297	99	3	1
	Name of Pt.	299	99.7	1	.3
	Age of Pt.	288	96	12	4
	Sex of Pt.	3	1	297	99
	Weight of Pt.	36	12	264	88
	Rx-Symbol	268	89.3	32	10.7
Inscription	Strength of Drugs	270	90	30	10
	Duration of Treatment	295	98.3	5	1.7
Subscription	Instruction to the Pharmacist	0	0	300	100
Signatura	Direction to the Pt.	300	100	0	0
	Follow - up Advice	91	30.3	209	69.7
Signature/Initial of Prescriber with date.	Doctor's Name	300	100	0	0
	Doctor's Qualification	298	99.3	2	.7
	Doctor's Address	300	100	0	0
	Reg. Number	45	15	255	85
	Sign	265	88.3	35	11.7

The percentage of presence and absence of particular items in each parameters of prescription are shown in Table III. Among 300 prescriptions the result was observed.

Discussion

The result of the study allowed us to get a general idea about the doctors practicing in private chambers within Rajshahi Metropolitan area and also about the standard of prescription pattern according to WHO core drug prescribing indicator which includes average number of drugs per prescriptions, percentage of drugs prescribed by generic name, percentage of encounters with an antibiotic prescribed, percentage of encounters with an injection prescribed and percentage of drugs prescribed from EDL. The study also showed a prescription structure analysis among the physicians according to the mechanics of prescription order writing. In the present study, total 100 doctors were included. Among these private practitioners, 78% were male and only 22% were female. Whereas among total population of Rajshahi, gender ratio is 1:1[10]. In one study carried out with private practitioners in Islamabad, Pakistan showed that among the practicing GP's, 95% were male and only 5% were females[11]. In the present study, among the observed physicians 56% were holding Fellowship/PhD degrees, 33% were MD/MS degree holder, 8% were with Diploma degrees and only 3% were simple MBBS/BDS degree holder. This might be because of mostly specialized doctors practices within the metropolitan area and graduate doctors usually practices in rural areas around and outside the city as well. Urban patients believe that they will get better treatment from specialized doctors, even when simple symptoms appear, they likely to visit specialist physician.

In the present study, 167 prescriptions were without any written diagnosis. The reason might be mostly due to complicated cases come to specialized practitioners chambers and often those were referred cases by public hospitals' relevant departments and sometimes from other practitioners chambers. So at first physicians give some symptomatic treatment and also advices for relevant investigations, these initial prescriptions do not contain any diagnosis. After getting reports of those investigations, when the patients visit next time, the physicians then prescribe the final treatment and write the confirm diagnosis. Only one prescription was with an unreadable diagnosis.

With regard to the average number of drugs per prescription, the value found in the present study was 4.38. Similar studies conducted in other countries, where the values found were lower than the current study, like the result of a study in Nigeria 3.8,[12] in Pakistan 3.04,[11] a single study in Nepal 2.91,[13] in India 2.7,[14] Brazil 2.4,[15] Jordan 2.3[16] and Zimbabwe 1.65.[17] This difference is may be due to variation in health care delivery system, socioeconomic criteria and mortality and morbidity criteria of the population. According to WHO, the average number of drugs per prescription should be 2.0.[18] So polypharmacy is reflected by the result of the study. This polypharmacy might cause adverse drug reactions, drug-drug interactions, decreased efficacy of treatment regimens and unnecessary drug expenses. But in private practitioners chambers sometimes prescribers prescribe more drugs to satisfy patient's desire. Some patients believe that expensive and more number of medicines will cure them from illness perfectly and quickly, and most of the time the patients who visit private practitioners chambers are financially solvent. So costing of medicine does not affect them in negative way.

Percentage of drugs prescribed in generic name was 0% in the current study. This is very much less in comparison to other countries. More than 60% of the drugs were prescribed by generic name in 26 countries. Pakistan, India, Uzbekistan, Namibia showed less than 50% of drugs prescribed by generic name[19]. Generic drugs are not manufactured widely in Bangladesh. In the present study, as only antimicrobial prescribed prescriptions were included, so percentage of encounters with an antimicrobial prescribed was 100%. WHO recommended target of prescribing injection is 10% or less[20]. But in this study the percentage is 13.3%. This increased rate of injection use may be caused by some factors like, as only antimicrobial prescribed prescriptions were collected, so there were some severely infected patient included in the study, of whom treatment was apparently not possible without an high dose injectible antibiotic, and as the patients were not complaining about the treatment costing, and demanded for quick recovery, so prescribers were not hesitated to use injectible antibiotics in treatment of the infectious diseases. Other than parenteral route oral, topical and inhalational forms were also prescribed. 1134 (86.23%) drugs of total 1315 were prescribed in oral route which was the most common. The percentage of drugs prescribed from EDL was 29.05%.

The study revealed some deficiencies in the presentation of a large number of prescriptions. Gender was mentioned in only 1% prescription. The cause might be, in our country gender can be identified by a person's name. So the physicians were not interested to waste time on mentioning it separately.

Only 12% prescription contained weight of the patient, which is very important in calculating dose of drugs especially in case of pediatric patient. Subscription was not written in a single prescription, no one of the prescribers gave instruction to pharmacist. This is because the survey was performed entirely in private sector, not in any public hospital, and now a days all single and fixed dose combinations are available in various formulations in dispensaries and pharmacies, patient can easily collect those drugs from there.

Within doctors' information, only 15% mentioned BMDC registration number, though it should be mentioned in each and every prescription to prevent the patients from getting harassed by doctors with fake registration number and certificate. But doctors' name and address was mentioned in all prescriptions, which was satisfactory. 88.3% prescriptions contained signature of physician. Direction to the patient for taking medicine was also properly written on 100% of prescription, but follow up advice was written in only 30.3% prescription. Rx- symbol was written in 89.3% prescription, of which maximum was printed on upper left side of the layout. Date of prescription issued was mentioned in 99% of prescriptions. All of the physicians have their own writing pads and after prescribing drugs, each patient was provided an art paper file to hold the prescriptions and investigation reports. It helps the patients to maintain all important documents and papers relevant to treatment.

Conclusion

This study provided a feature on the layout of prescription, prescribed by the physicians with different qualifications in their private chambers within Rajshahi Metropolitan area. Polypharmacy was frequently practiced. Prescribing of generic drugs was completely absent. Rate of injection use was higher. Use of drugs from national EDL was not satisfactory. Prescribers were completely unaware of maintaining standard prescription layout. No formatted layout of standard prescription was found, so there were no checking points also for monitoring standard prescription. Not even a single prescription contained directions given to the dispensers or pharmacists. Gender and weight of patients, proper follow up advice and doctors BMDC registration number were not found in maximum layouts.

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