

IRRATIONAL PRESCRIPTION WRITING PRACTICES AMONG PRIVATE PRACTITIONERS IN URBAN AREAS OF WEST BENGAL

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ABSTRACT

Prescription is a main tool of communication between patient and physician. Though in prescription, physicians usually make many errors which lead to dreadful conditions. In this study we tried to figure out those errors among private practitioners in urban area. A total of 1132 private practitioners' prescriptions irrespective of clinical expertisation were collected and audited. Omitted information included physician's address (absent in 29.3%), signature (in 19.9%), registration number (77.3%) and date (24%). The patient's name was missing in 26.9% of instances, patient's address in 91.1% and age in 27.4% prescriptions. Only 37.4% prescriptions in our study contained a

diagnosis or indication of drug use. Dose and dosage form were not mentioned in 56.9% and 7.5% prescriptions whereas duration of drug use was omitted in almost 45% prescriptions. In this study on average 3.32 drugs were prescribed per prescription. Drugs prescribed in generic name were 0.008%. Antibiotics and injections were prescribed in 36.2% and 9.1% encounters respectively. Drugs prescribed from Essential Drug List (EDL) in this study were 32.3%. So prescriptions were written in many occasions irrationally and this trend was very high among urban private practitioners.

KEYWORDS: Prescription, Essential Drug List, audit, legibility.

INTRODUCTION

Prescription is a written order from physician to pharmacist which contains name of drug, its dose and its method of dispensing and advice over consuming it.^[1] Prescription is a major tool in health care system and a main communication between physician and patient. The prescribing of medicines is an integral part of the provision of health and represents a

relatively safe, effective and inexpensive mode of treatment.^[2] With increasing population and increasing availability of medicines, prescription today becomes very much important for patients and also for prescribers. Irrational use of drugs by physicians becomes a major concern. The World Health Organization (WHO) defines rational use of drugs as “patients receive medicines appropriate to their clinical needs, in doses that meet their own individual requirement for an adequate period of time at the lowest cost to them and their community.”^[3] Third world country like India spends 30-40% of health budget in drugs.^[4] So it is very much necessary to evaluate prescription practices time to time to look into whether those expenditure are used rationally and also finding errors of prescribers to ensure safe public health. Errors can be of any type, which may be during writing information on prescriptions or during dispensing drugs. To prevent this, WHO took many steps and this rational drug prescribing has been the subject of several studies.^[5] WHO coined the term ‘Essential drug’ and defined as drugs that meet the priority health care needs of the population.^[6] International Network for the Rational Use of Drugs (INRUD)^[7] was formed to promote more rational use of medicines. To develop and propagate the concept of the rational use of medicine in India, All India Drug Action Network was formed and subsequently Drug Action Forum - West Bengal and Rational Drug Campaign Committee were developed in Kolkata.^[7] To improve health care system, Indian Government as well as other state Governments accepted Public Private Partnership model as per 2002 Health Policy. Among this, Private clinics, Private hospitals nursing homes account for 82% of all outpatient department visits at the all India level.^[8] Though in these private health care set-up, irrational and over use of drugs are very high, creating a havoc burden in health system.^[9]

In previous studies prescription writing practices among only hospitals were given importance. But private set-ups though play major role in health system, were less focused. Hence, a study was planned to evaluate prescription errors in particularly private practitioners in urban areas around Burdwan in West Bengal.

MATERIALS AND METHODS

This cross-sectional survey was conducted in urban areas near Burdwan and prescriptions were collected from private practitioners of private clinics, private hospitals or nursing homes situated in those urban areas.

Prescriptions were collected from patients who came to treat at different clinical units in those private set-ups. The prescribing doctors were unaware that their prescriptions were

being audited because if they knew, they would be conscious and there might have chance of bias. Verbal as well as written consent were taken from patients to include their prescriptions in this survey. They were assured that their identity would never been disclosed. Prescriptions including both handwritten and computer generated types were collected; some data were put in data record form and then prescriptions were photocopied from nearest photocopy centres for extracting more data in future. Prescriptions from March 2012 to September 2015 were collected for auditing. There was no specificity in patient age group, diseases or departments while collecting prescriptions though prescriptions from only registered allopathic medical practitioners were surveyed. After collection of all the data statistical analysis was done and frequencies mean and percentages were calculated.

After collection, prescriptions were analysed for objective and subjective information. Included indicators were the patient's name, age and address and the prescriber's address, date, signature and registration no. Handwritten prescriptions were also examined for legibility by four of our hospital pharmacists. If diagnosis, dose, dosage form, duration of use and direction for use were not mentioned, they were sorted out.

WHO prescribing indicators used in our study were-

1. Average number of drugs per encounter

total no of drugs prescribed in all encounters divided by total no of encounters. Combination of drugs was taken as single drug.

2. Percentage of drugs prescribed by generic name

calculated by dividing total no of drugs prescribed in generic name by total no of drugs prescribed, multiplied by 100.

3. Percentage of encounter with the antibiotic prescribed

calculated by dividing total no of encounters with antibiotics prescribed divided by total no of encounters, multiplied by 100.

4. Percentage of encounter with an injection prescribed

total no encounters with injection prescribed divided by total encounters, then division result was multiplied by 100.

5. Percentage of drugs prescribed from essential drug list (EDL)

calculated by dividing total no of drugs prescribed from EDL by total no of drugs prescribed, result was then multiplied by 100.

After completion of data collection, information from data record form and photocopied prescriptions were put in a master chart and percentage were calculated.

RESULT

Total 1132 prescriptions were evaluated, among them both handwritten and computer generated prescriptions were included. All prescriptions were prescribed by registered allopathic medical practitioners in private set-up. Prescribers' profiles and the number of prescriptions written by them are shown in Table 1.

Table 1: Profile of the prescribers and no of prescriptions written (N=1132).

Profile of prescribers	Prescriptions written by them No. (%)
General Practitioners	625 (55.2)
Specialists	347 (30.7)
Dentists	160 (14.1)

Common errors done by practitioners like absence of prescriber's address, registration no, date, name of patient, age, dose, dosage form etc were also evaluated and measured. Details of these errors helped us to know the pattern of committing those errors among prescribing physicians. They are shown in details in following Table 2.

Table 2: Errors done by prescribers (N=1132).

Errors by prescribers (Absence/not mentioned)	Prescriptions No. (%)
Address of prescriber	332 (29.3)
Registration Number	875 (77.3)
Date	272 (24)
Signature of prescriber	226 (19.9)
Name of patient	305 (26.9)
Address of patient	1031 (91.1)
Patient's age	310 (27.4)
Poor legibility	602 (53.2)
Provisional diagnosis	709 (62.6)
Dosage form	85 (7.5)
Dose	645 (56.9)
Duration of drug use	505 (44.6)
Direction for drug use	390 (34.4)

In all those prescriptions 3758 drugs were prescribed. The mean or average number of drugs prescribed per prescription was 3.32. Only 32 among 3758 drugs were prescribed in generic name. Antibiotics were prescribed in 410 encounters (36.2%) and among 3758 prescribed drugs 1120 were antibiotic (29.8%). Injection was prescribed in 103 encounters (9.1%). Only 32.3% prescribed drugs were from EDL of India. Prescribing indicators are shown in Table 3.

Table 3: Assessment of prescribing indicators.

Prescribing indicator assessed	Number (%)
Average no of drugs per encounter (N=1132)	3.32 (NA)
Drugs prescribed by generic name (N=3758)	32 (0.008)
Encounters with antibiotic prescribed (N=1132)	410 (36.2)
Encounters with injection prescribed (N=1132)	103 (9.1)
Drugs prescribed from EDL (N=3758)	1214 (32.3)

Different speciality physicians prescribed different entity of medicines and according to that cost of drugs per prescription varied widely. Prices of drugs were calculated from 'refRx' Drug Database (Apr-Jul 2015). Those are shown in figure 1.

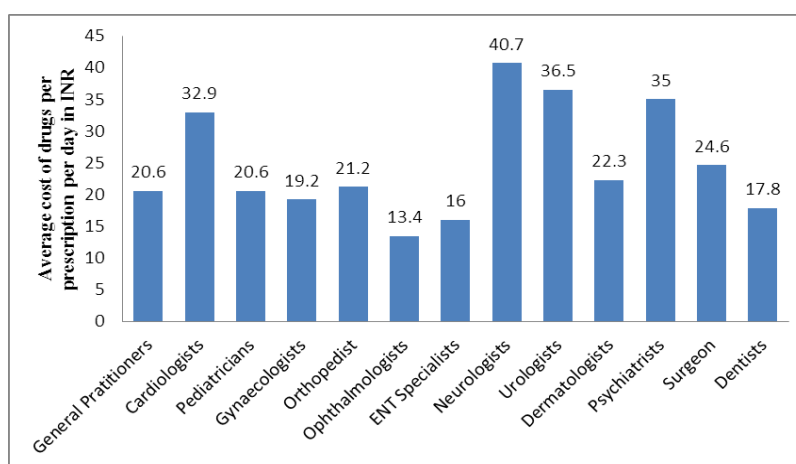


Figure 1: Average price per prescription regarding different medical specialties.

DISCUSSION

The designed study was to evaluate prescribing practices among private practitioners in urban areas of West Bengal.

The World Health Organization (WHO) compiled a set of core drug use indicators that are useful for studying patterns of drug prescribing in health-care facilities.^[10] The components of

indicators are: prescribing indicator, patient care indicator and facility indicator. In our study we try to concentrate only on prescribing indicators and other prescription writing errors.

Our results clearly show that there is an urgent need for improvement in prescription writing practices because a good proportion of prescriptions lacked important information. Omitted information included physician's address (absent in 29.3%), signature (in 19.9%), registration number (77.3%) and date (24%). The patient's name was missing in 26.9% of instances, patient's address in 91.1% and age in 27.4% prescriptions. Prescriber's address is very necessary for emergency contact. Date, signature, registration number of practitioners are important for medico legal purposes as prescription is a medico legal document. These results were similar to studies done in Nepal and Pakistan.^[11,12] Poor hand-writing of practitioners can lead to fatal instances of inadvertent drug substitutions.^[13] Less than half of our audited prescriptions showed good legibility. The absence of a diagnosis or chief complains makes it difficult to assess the disease pattern and may lead to repetition of testing and treatment, increasing unnecessary medical cost and medical hazards to the patients. Only 37.4% prescriptions in our study contained a diagnosis or indication, which is higher than figures reported from Pakistan.^[12] In this study, it was found that dose and dosage form were not mentioned in 56.9% and 7.5% prescriptions, which were 63.8% and 8.7% reported from Pakistan.^[12] and the result was much higher than Nepal.^[11] In almost 45% of prescriptions duration of drug use was not mentioned, which was lower than 55.4% reported from Pakistan.^[12] Our study found that 34.4% prescriptions lacked direction of drug use which was worse than reports from Nepal and Pakistan (almost 11%).^[11,12]

According to World Health Organization an ideal average upper limit is 2.0 drugs per prescription^[14], in our study that was 3.32 drugs per prescription which was definitely poly pharmacy, a common practice among private practitioners. Studies from other states like Tamil Nadu, Madhya Pradesh and Uttar Pradesh reported 4.54, 2.8 and 3.1 drugs per prescription respectively.^[9,15,16] Our study report of average drugs per encounter was higher as compared to study conducted at Spain, Sweden, China and Bangladesh where it was 2.3 and 1.4, 2.04, 1.44 respectively.^[17,18,19]

In our study, 0.008% drugs were prescribed in generic name which is negligible beside the WHO recommendation of 100% drug prescribing in generic name. Reports on generic drug prescribing in other states like Tamil Nadu, Madhya Pradesh and Uttar Pradesh reports in generic name drug prescribing were 62%, 48.5%, 27.1% respectively.^[9,15,16] Studies from

China reported 69.2% of generic name use in prescription.^[18] Private practitioners are specially inclined to brand name drug prescribing for their benefit from pharmaceutical companies and this practice also progressively increases medical cost irrationally, our study also showed that inclination.

Antibiotics were prescribed in 36.2% encounters, which is high according to WHO recommendation (<30%). In Tamil Nadu, Madhya Pradesh and Uttar Pradesh percentage of prescriptions where antibiotics prescribed were 55, 60.9, 39.9 respectively.^[9,15,16]

In Pakistan and Nepal reports were 57.2% and 72%.^[12,20] In China it was 38.15%.^[18] In many of these prescriptions indication for antibiotic prescribing was not clear and sometimes used irrationally, this helps to increase antibiotic resistance among pathogens and increases medical hazards.

This study revealed that in 9.1% encounters injections were prescribed. In Tamil Nadu and Madhya Pradesh report were 5.2% and 13.6%.^[9,15] In China 22.63% prescriptions contained injections^[18] whereas in Iran it was as high as 58%.^[21] It is always necessary to keep the percentage of encounters with an injection prescribed low to decrease the risk of communicating diseases through syringe, also to decrease medical cost for patients and improve patients' compliance.

Drugs prescribed from EDL in this study were 32.3%. Studies in Tamil Nadu and Madhya Pradesh showed the result as 37.3% and 66.9% respectively.^[9,15] Another study showed 29.38% prescribed drugs from EDL.^[22] In a study in Bangladesh and Nigeria it was 85% and 94% respectively.^[19,23] WHO formed this EDL keeping in mind many advantages like cost, safety and effectiveness. Our study showed that trend of writing prescription from EDL was poor and this needs to be emphasised and improved in future.

Today health cost is a major concern for patients as well as physicians as health care costs continue to escalate. In our study, we saw that there was a tendency of physicians to prescribe more drugs than that actually needed like irrational prescribing of multivitamins, acid blockers and also antibiotics. These increased tendencies of poly-pharmacy, irrational drug use and increase unnecessary medical costs. Average cost of drugs per general practitioners' prescription per day was 20.6 INR. The highest and lowest costs of drugs per prescription were belonged to neurologists' and ophthalmologists', 40.7 and 13.4 INR respectively. This

high medical cost which was irrational in many times, made patients less compliant and put unnecessary medical burden over society.

CONCLUSION

Despite some limitations like small number of prescriptions, lack of information on average cost per group of drug per prescription and average consultation time, it is evident from our study that there are many errors done by private practitioners while writing prescriptions. Omitting registration number, high number of drugs per prescriptions, overall tendency to write brand name of drugs, low prescription of drugs from EDL are some of those malpractices done by private practitioners. So prescription pattern among private practitioners should be improved as they are main pillars in health care system. This is to start at grass root level, rational prescription writing curriculum with emphasis on the WHO prescribing criteria should be included in MBBS syllabus. Continuous awareness programme among physicians should be held time to time for implementation of rational and safer drug prescribing and drug therapy.

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