



# Research Journal of Pharmaceutical, Biological and Chemical Sciences

## Study of “Patient Satisfaction Index & Prescription Practice” in 24 Pgs(s) in West Bengal

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### ABSTRACT

The survey was made to gather information on existing prescription practices, dispensing practices and patient satisfaction in different healthcare services of West Bengal, India. A cross sectional study design was used for this purpose. Major three health care facilities were selected from 24 Pgs south district keeping appropriate representation from first level health facilities, district health facilities and tertiary care hospital as well as rural & urban areas. Analysis of selected indicators was carried out on the basis of health facilities, gender and different age groups. Documentation of 137 responses was completed from this district, namely south 24 pgs. Almost equal distribution of encounters was maintained representing different health facilities. 47% of encounters involved children less than 15 years of age. Female patients comprised of 41.61%. The mean dispensing time was only 41.7 seconds, the mean consultation time was 2.43 minutes and the average number of drugs per prescription turned out to be 3.153 out of which only 14.3% drugs were being dispensed in generic form. More than 29% of the prescriptions contained antibiotics and 79% of patients were prescribed with proper dose description. Only less than half of the patients expressed satisfaction with their visit to health facility. Like many other developing countries, prescription and dispensing practices are not satisfactory in any health facilities of West Bengal a state of federal India. Appropriate and workable solutions need to be developed and implemented in India to improve the systems.

**Key words:** Patient satisfaction, rural, urban, prescription practice, 24 Pgs(s) in West Bengal, India.

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## INTRODUCTION

Drugs are the essential tool for preventive, curative and rehabilitative health care. The National Health Policy 2002 of India [2, 4] also gives thrust on rational use of drugs within the allopathic system along with increased access to systems of traditional medicine. The number and type of drugs is constantly increasing, while the financial resources for health care services in general, remain limited in India. Indian markets are flooded with over 70,000 formulations, compared to roughly 350 preparations listed on the WHO Essential Drugs List [1, 5]. India spent around 3.2 billion US dollars on drugs procurement in the year 2009-10. Despite these heavy spending, one third of Indian population lacks to access essential medicine which actually goes up to one half in Asia and Africa [7]. Therefore rational drug management has become an increasingly important topic in order to make optimal use of the drug budget to offer health services of the highest possible standard.

Another important contributor towards this wastage is irrational use of drugs by prescriber from primary to tertiary level health care facilities. A number of studies have been carried out on prescription practices and a few on dispensing practices in India but there is no comprehensive survey on district level in Healthcare facilities is available till date [3]. Rational and scientific interventions to improve the drug management systems can only be carried out in the presence of appropriate and up to date information on the existing practices [6]. We carried out a `baseline survey to identify the problems and quantify the existing issues in drug management systems in India. The objective of the survey was to gather data on existing drug prescription and dispensing practices and to measure the patient satisfaction related to the drug management and use. Selected different sectors of healthcare facilities in the West Bengal, mainly at 24 Pgs South was contacted for carrying out this study survey.

## METHODOLOGY

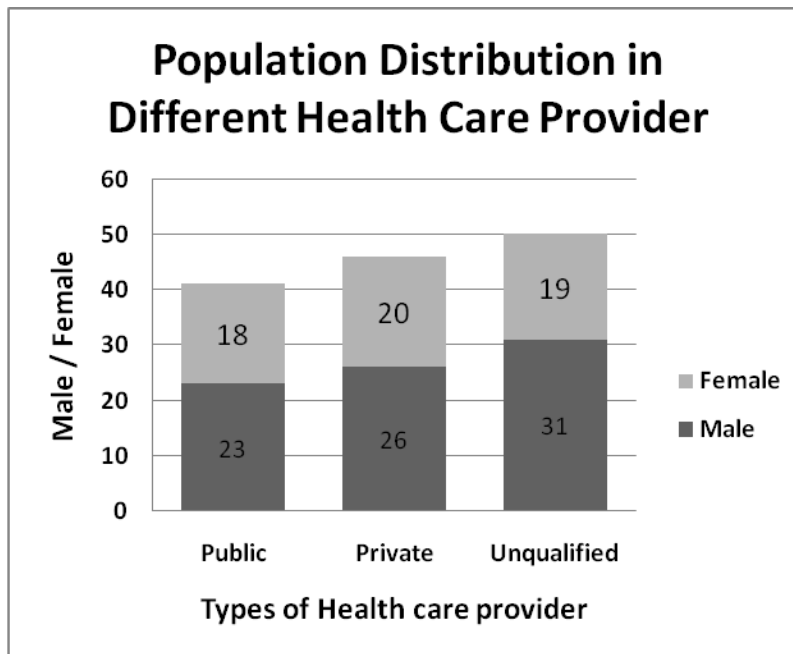
A cross sectional design was used this quantitative study and data was collected over a period of 2 months. The district 24 Pgs South was divided into two hypothetical divisions of Urban and Rural area: One district main public hospital was selected for conducting the survey. The selection of district hospital was carried out on the basis of population distribution and its multispecialty facilities keeping in mind accessibility and other logistic factors. Three public health facilities, one from each tier of primary, secondary and tertiary care were then randomly selected from each area of this selected district. These usually included one Primary Health Center (PHC), one Community Health Center (CHC) and one District Headquarter hospital (DHQ). Private hospitals from this district were also included in the survey sample. Local unqualified private practitioners (not an MBBS doctors), medicine shops and traditional / spiritual healers were grouped into the category of unqualified practitioners. The guidance for this kind of sampling was taken from World Health Organization (WHO) guidelines published in "How to investigate drug use in health facilities." Pre-testing of data collection instruments was done before their finalization. Interviewers were equipped with 2 days structured training including field trips and hands on training. Schedule of two months for data collection was

finalized with interviewers. The Patient's visit to the different healthcare facilities and his/her encounter with the health workers (prescriber and dispenser) was taken as one unit for the purpose of analysis. The indicators selected were quite comprehensive and covered all the three aspects of the survey objectives (Figure 1). Following a pilot study to calculate the current prevalence of morbidity, 250 households were selected by multistage stratified random sampling. Socio-demographic characteristics of 1522 persons belonging to these households were obtained by interviewing head or any other responsible household member using pre-designed and pre-tested schedule. Medical care received by morbid individuals, sick within 15 days prior to the interview including morbidity carried over from earlier period was recorded as per prescription details, wherever available. The data was analyzed using Statistical Package for Social Sciences (SPSS version 10.0). In order to draw meaningful inferences, means and proportions were compared by applying Student's t-test and Chi-Square test, respectively.

## **RESULTS**

One hundred and Thirty Seven samples were recorded from this district. 41.67 percent patients were females. The distribution of types of Healthcare provider and sex in this district is shown in the Figure 1. The rural and urban health facilities were more or less represented in our sample. The types of prescriber in all the surveyed facilities included doctors (60.58%), Qualified Health Workers (2%) and Dispensers/ Unqualified Practitioners (36.49%). The value of various indicators is shown in Table 2. Each indicator was calculated with respect to district, sex, age group and types of area (Table 3). It was observed that none of the dispensers used any devices for dispensing the drugs and none of them wore gloves for preventing contamination of the dispensed drugs. Only 11.2% drugs dispensed were adequately labeled and this percentage was significantly higher in the teaching institutions. Only 15% of the encounters showed duplicate chit system in which one chit would be kept at the facility for record keeping and the other given to the patient along with the medicines. Dispensers described the dose to 79% patient (correctness of the dose and information was not assessed) but only in 21% encounters it was checked back.

Figure I. Population Distribution in Different Health Care Provider



### Prescribing indicators

- a. **Sample Mean of drugs per prescription:** The purpose is to measure Polypharmacy.
- b. **Standard Deviation of Drugs dispense per prescription:** The purpose is to measure the range of deviation of dispensing drugs per prescription.
- c. **Percentage of encounters with an antibiotic prescribed:** To measure the overall use of the essential, rational, important drugs as per intensity of diseases.
- d. **Percentage of encounters with an injection prescribed:** To measure the overall use of this modality of treatment. All immunizations have to be excluded from this list of injections.
- e. **Percentage of encounters with a diagnosis on prescription:** The diagnosis is often neglected and could be categorized as poor practice, forming basis for irrational drug use. We had taken any symptom, category of disease, provisional or specific diagnosis as "yes" without actually verifying the correctness of diagnosis by prescriber.
- f. **Percentage of encounters with drug dosage written:** To measure the encounters in which dosage is mentioned with the drug prescribed. We have taken any form of dosage written with at least one drug in the whole prescription as "yes" without actually verifying the correctness.



## Dispensing indicators

- a. **Average Dispensing time:** This measure the average dispensing time that dispensing personnel spends with patients. It is measured in seconds and starts when the patient presents his prescription to dispenser and ends when he leaves the dispensing counter.
- b. **Average Number of drugs per prescription actually dispensed:** Measures the adequacy and ability of the facility to provide prescribed drugs. Measured at exit by counting the number of drugs carried by the patient. The quantity of the dispensed drug was not taken into account for the purpose of the survey. The average was be calculated by dividing the total number of different drugs dispensed by the number of encounters surveyed.
- c. **Percentage of drugs actually labeled:** To measure the extent to which dispenser's record essential information on the drugs, including at least the name of patient, name of drug, dosage with route and duration. Calculated by number of encounters with labeling divided by total number of encounters.
- d. **Patient's knowledge about correct drug dosage:** Measures the effectiveness of the information given to patients, on drug dosage schedule of his/her drug. Any one of the drugs was picked at random and patient was asked to narrate the dosage and duration. Calculated by number of patients knowing their dosage by total number of encounters.
- e. **Validation of prescription:** Evaluates the validation carried out by the dispenser, regarding the identity of the patient. Directly observed while watching the dispensing process and calculated by dividing the encounters with validation with total number of encounters.
- f. **Communication of dosage to patient:** To evaluate the communication between the patient and dispenser, regarding drug usage. Direct observation was carried out to note down this indicator.
- g. **Checking the dosage instructions:** To evaluate the effectiveness of the interaction between the patient and the dispenser. It was directly observed whether the dispenser checks back and asks the patients about his/her understanding of the dosage.
- h. **Preparation of prescription:** Preparation of prescription by use of bare hands or by a tablet counter etc is important for any dispensing evaluation and possible intervention/training. It was directly observed.
- i. **Record Keeping:** This is either in the form of prescription chit, maintaining a register, or entering record on computer. The system of record keeping was inquired in each health

facility before start of the whole observations, confirmed during the process and recorded accordingly.

### Patient care indicators

- a. **Average consultation time:** It measures the time; medical personal spends with the patient for consultation, examination and prescription writing. It starts with the patient entering the doctor's room and ends when he leaves the room. The observer measures the time in seconds while standing outside the consultation room and average of all the encounters is calculated.
- b. **Overall satisfaction with visit to health facility:** This is a complex indicator but finds out the satisfaction as a whole and not necessarily means complaints. The question was asked in the language well understood by the patient at exit from health facility by a local associate of the team. The answer was recorded as yes or no and calculated as percentage of total encounters.

A total of 137 prescriptions were analyzed. The average number of drugs prescribed was 3.153 (range: 0-7) that was higher than the suggested WHO criteria of less than 2 drugs per prescriptions. This was almost the same in all the types of service provider, in genders, age groups and types of area. In one study carried out with private practitioners in 24 pgs south the average number was 3.65, much higher than others. In the case of public the average was the 2.68 whereas in the case of unqualified practitioners the average was 3.08. In Bangladesh the mean number is 1.4 and in Nepal it is 2.1[13] where as in Nigeria it is 3.8 [12]. These figures do suggest that the number of drugs per prescription is much higher in India as compared to other regional countries that do have the same spectrum of diseases and socio-economic pattern of population. The number of drugs actually dispensed was also investigated and more or less 3 drugs per prescription was the estimated amount. . The mean difference between the prescribed and dispensed drugs came out to be  $\pm 1.392$  (95% CI: 0.98 - 1.15;  $p=0.0$ ). This shows the inability of the health system to provide prescribed drugs to patients. Non availability of essential drugs, prescriptions outside the essential drug list or non adherence to standard treatment protocols could be among many other reasons.

The percentage of prescriptions containing one or more antibiotics was 29.2%. This percentage among males, larger facilities and younger age group was much higher when compared with the average. Qualitative investigation of prescription was beyond the scope of this study, therefore it is difficult to give a valid reason for this difference, but the overuse of this potentially dangerous medicine is very apparent. Other regional and national studies have shown a range of 25 to 58 percent [8,9]. Similarly injection use is also quite high (9.49%) considering that we only considered outpatient prescriptions in our survey. It was significantly higher in public healthcare providers, smaller facilities and males to the extent that every 8th person visiting an RHC would have an injection. Private practitioners are less frequent users of injection compare to other health care providers. However the use of injections in India is very

high when compared with the region as in Nepal it is only 5% [13]. The percentage of prescriptions having any diagnosis (major symptoms or provisional or specific diagnosis) was 67%; however accuracy of the diagnosis was not inquired. Similarly, some form of dosage instruction was written on 90% of prescriptions but its correctness was not confirmed.

Medicines are critical in health care services not only for their medicinal value but also for the patient's satisfaction associated with them. Inadequate availability of medicines at health care providers and poor healthcare, even though high proportion of health budgets is allocated to medicines, is a real problem for the health care manager and the patient alike.

**Table I. Values of selected indicators.**

Particulars	Total
Total No. of Household surveyed	250
Total No. of Morbidity Exposed	485
Total encounters (Prescriptions)	137
No. of Drugs/prescription (Mean)	3.153
SD of Drugs dispensed / prescription	±1.392
Prescriptions with Diagnosis (%)	67.0
Prescriptions with dose written (%)	90.0
Antibiotics on prescription (%)	29.2
Injections on prescription (%)	9.49
Dispensing with dose description (%)	79.0
Drugs Level / prescription (%)	11.2
Dispensing time/patient (Ave)	41.7 Seconds
Consultation time (Ave)	2.43 Minutes
Dispensing with Generic Drugs (%)	14.3
Patients knowing dose (%)	62.2
Satisfaction of patients (%)	43.0

**Table - II. Indicators for types of service provider, gender, age and facilitate area**

Sl. No.	Indicator	Types of Service provider			Gender		Age Group		Area	
		Public	Private	Unqualified	Male	Female	<15 yrs	>15 Yrs	Urban	Rural
1	Average no. of drugs per prescription	2.68	3.65	3.08	3.13	3.19	3.28	3.06	3.25	3.07
2	SD of drugs dispensed per prescription	±1.352	±1.371	±1.294	±1.341	±1.301	±1.297	±1.378	±1.326	±1.313
3	% of encounters with antibiotics	34.15	34.78	20.00	37.8	32.4	29.6	33.79	36.4	32.7
4	% of encounters with injections	12.2	6.52	10	8.4	7.9	10.2	7.2	7.3	13.6
5	% of encounters with diagnosis written	77.1	79.0	52.3	74.2	69.3	73.0	70.4	73.3	67.7
6	% of encounters	88.4	96.8	67.8	85.9	86.2	85.9	86.2	89.8	84.1



	with drug dosage written									
7	Mean dispensing time in seconds	57.3	48.6	29.2	37.9	56.2	56.2	40.6	33.8	42.5
8	% of drugs labeled	11.6	19.7	1.00	12.0	9.00	11.7	8.20	17.9	6.50
9	% of patients with knowledge about correct dose	73.9	91.0	62.8	82.0	54.5	46.6	79.0	72.3	54.0
10	% of dispensing encounters with Generic Drugs	11.6	19.7	6.2	12.2	6.49	2.5	13.2	13.67	5.68
11	Mean consultation time in seconds	167.7	162.2	163.3	154.5	193.1	104.9	177.6	117.0	167.8
12	% of patients satisfied with the visit	78.0	46.0	48.0	63.0	59.0	54.0	59.0	60.0	59.0

### DISCUSSION

The study is meant to serve as a baseline survey for the policy makers, managers, researchers and other stakeholders. It was intended to quantify the problems and not answer the "whys" which could be taken up by some other follow up study. The larger picture of our drug management system, emerging from the survey is not encouraging. The mean consultation time of about one and a half minute for each patient as per our findings is much below the required standards. Contact time of doctor per patient is less than 3 minutes which is indefensible compared to the statistically significant however the time was slightly more in teaching hospitals as compared to other facilities. It was interesting to note that the patient satisfaction was directly associated with the length of time spent with the prescriber [14]. In UK the average dispensing time is about 15 minutes (personal communication) [12], whereas our study depicts this figures to be as less as only half a minute. The dispensing time in other regional studies vary from 23 seconds in Bangladesh to 86 seconds in Nepal. [13] The dispensing time in our study was significantly more in smaller facilities as compared to larger facilities. There was no statistically significant difference observed between various age groups, gender and types of service providers. The dispensing practices are the most improvement desiring section of entire drug management system. The communication of the dispensers with patients is poor. Although almost 79% is communicating the dose but only one fifth of them are checking back, which is an essential component of dispensing procedure. Data depicted that only 62.2% of the patients know about the dosage of their drugs at exit time, effort and expenses consumed in reaching the health facility. In Pakistan, the mean time of 2 to 2.3 minutes of interaction between doctor and patient [7, 9]. The study by Siddique et al compared consultations between private and public sector, both were inadequate but private sector was a little better in this respect. [8] The regional studies in Bangladesh and Nepal show the average consultation time to be between 1 to 3 minutes [13]. The variation in various districts is not



interviews. Rest of them has absolutely no information about the use of medicines, which in other words implies that nearly half of the drugs dispensed go waste because of poor communication. The labeling and preparation of the medicine by dispensers is almost non-existent. The minimum requirement for labeling was taken as name of patient, drug dosage and duration. Only one fifth of encounters met these criteria mostly observed in teaching hospitals. There was absolutely no concept of hygiene, cleanliness and quality during the entire dispensing procedure. Dispensing with validation was carried out in a major percentage but again this was not very satisfactory.

### CONCLUSIONS AND RECOMMENDATIONS

The prescribing and dispensing practices in different Health Care Provider in the 24 Pgs south district is much to be desired. Short interaction time with patients by health workers, overuse of antibiotics, Polypharmacy, poor communications between patient and dispensing personal, inadequate and faulty dispensing techniques are some of the factors which plague our health care systems according to this report. Based on our observations we recommend larger and more comprehensive surveys at regular intervals, dissemination of these ground realities to policy makers and development of workable interventions targeting the identified areas to improve drug management systems in all sectors in India.

### ACKNOWLEDGEMENTS

I specially acknowledge Dr. R. N. Dubey, Vice-chancellor, IFTM University, Moradabad for his encouragement to my research work and best wishes.

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