

Comparison of Writing Patterns of Prescription in Public and Private Sector Hospitals in Multan

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Abstract

Objective: To compare and evaluate handwritten prescriptions from the public and private sector hospitals/clinics and to determine whether there is any significant difference between the two.

Method: This study was Hospital based cross-sectional study. Study was conducted in the Department of Pharmacology and Therapeutics, Nishtar Medical University for a period of 3 months post-approval (June 2022-August 2022). Total 400 prescriptions were part of this study with 200 from private and 200 public hospital. They were collected and assessed under the World Health Organization's Guide to Good Prescribing. The prescriptions from one sector were then compared against those from the other sector to identify any significant differences.

Results: All prescriptions lacked at least some of the criteria of a good prescription with prescriptions from the private sector being better than those from the public sector. Prescriptions from both sectors were almost completely deficient as regards to the use of generic drug names. There was negligible difference between both sectors in terms of legibility of written prescriptions ($p=0.057$). While name of patient, his/her age, address, vitals, drug strength, dosage, and total quantity of drug prescribed are were compared, there were significant differences of 0.032, 0.021, 0.039, 0.048, 0.041, 0.033, and 0.039 respectively.

Conclusion: The private sector executes better than the public sector in prescription writing, but both sectors so far have fall short of the standards set by the World Health Organisation.

Keywords: prescription writing, prescription errors, private sector, public sector, prescription guidelines

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Introduction

A prescription is a set of instructions issued by a registered medical practitioner to a pharmacist to provide the patient with medication.¹ It should include information about dose, route of administration and the duration of drug administration, the goal of which

is to improve a patient's quality of life.² Concise and accurate prescriptions have the effect of shortening the duration of a patient suffering from a disease or a debilitating condition. It should be written in a very clear, legible manner, without unofficial abbreviations and it must follow the legal requirements of a prescription.³ Different countries may follow different patterns of writing a prescription, but they all follow some common standard points which include: the patient's demographic details, information about the drug (i.e., form of drug, frequency of intake, dose, concentration, manner of administration, duration of treatment with prescribed drugs) and data of the physician prescribing these drugs.⁴ The key factors in a well-written prescription are not only limited to the efficacy of the prescribed drug, the mode and duration of drug administration/application

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but also include a precise diagnosis, patient's vital information (weight, temperature, heart rate, etc) and potential toxic effects of the medication.

Absence of any of these components will lead to errors of prescription and ultimately will have reduced effectiveness of treatment on patient's health.⁵ According to a World Health Organisation (WHO) report, 50% of all medication is needlessly dispensed which is a waste of resources.^{6,7} WHO has formulated some indicators to measure the drug performance and to evaluate prescription (i.e., errors of omission and commission). Errors of prescription are of two types: a prescription that is deficient in essential information (i.e., inadequate information about dose strength, form of intake, quantity of drug and duration of drug to be delivered) contains the "error of omission". An error which occurs due to incorrectly written prescription is called "error of commission". Both errors can be avoided if a prescription is written following specified standards of writing. Both errors make treatment ineffective which leads to a wastage of time and resources and negatively impacts a patient's health and well-being. A study demonstrated that more than 15% of the prescription errors occur because of illegible prescription writing, unfamiliar abbreviations, problems with the zeroes position in the dose and incomplete drug instructions.⁸ Unfortunately, in Pakistan prescription writing remains unchecked by health authorities and is not given much importance. This ultimately causes patients to use drugs inappropriately which may adversely affect their health.⁹

An audit is defined as assessment of a method or a quality system that compares the existing system in contrast to its defined standards in order to point out its differences from the approved criteria and improve the quality of the actual process. Prescription auditing is a quality improvement process for enhancing the quality of patient care through a systematic review according to the recommended criteria and if done on the regular and strict pattern, it can improve the quality of treatment for the patient and ultimately setting high standards of health facilities.¹⁰

Materials and Methods

It was a hospital (outpatient) based cross-sectional study conducted in the department of Pharmacology and Therapeutics, Nishtar Medical University. Outpatient clinics, both at government and private sector hospitals, in Multan and its suburbs were the location where prescriptions were collected. Ethical approval was obtained

from the Ethics Review Committee Nishtar Medical University and the duration of the study was 3 months post-approval from the committee. 400 samples were collected at random, with 200 samples collected per sector (government and private sectors). Only hand-written prescriptions of consultant doctors (FCPS, FRCS, or an equivalent degree) were included in this study and prescriptions that were typed or printed were excluded. Prescriptions written by post graduate residents and medical officers were also excluded. A double-blind cross-sectional study was carried out where prescriptions provided to patients at both government (public) and private hospitals/clinics were collected for research purposes. In this randomised study, the prescriptions were analysed under WHO Guide to Good Prescribing and data was entered into a table containing all the requirements for a complete and legible prescription under WHO guidelines. The table contained details about the patient, the prescriber and details of the medications prescribed. Data about patients contained their name, age, address, gender, vital information (blood pressure, heart rate, weight, oxygen saturation, height) and the date they visited the hospital. Prescriber's details covered the name, address, and phone number at which a patient may contact the doctor. Drug details included generic drug name, strength of the drug, dosage form, and total amount of drug to be prescribed. Instructions/warnings regarding the drug(s) prescribed were also included and the prescription was also assessed regarding its legibility. Confidentiality of the patients and doctors involved was strictly maintained.¹⁰ The obtained data was analysed using SPSS version 23. WHO Prescription writing criteria falls in quantitative parameter and it was compared through independent t test. Probability value less than 0.05 was considered statistically significant ($p < 0.05$).

Results

While neither sector precisely followed WHO guidelines for prescription writing, prescriptions obtained from the private sector conformed more to the guidelines than those obtained from the public sector. Prescriptions mentioning date of treatment in the public sector ($n=131$, 65.5%) were lower than the private sector ($n=183$, 91.3%). Regarding the demographic details of the patients, the name and age of the patients treated in the public sector were mentioned on 93.4% ($n=187$) and 39.3% ($n=78$) of the prescriptions respectively. In the private sector, this figure stood at 96.5% (193/200) and

89.6% (179/200) for patient name and age respectively. While prescriptions from the private sector mentioned gender in 86.2% (n=172) of the prescriptions (18% in public sector prescriptions, n=36), they lagged as compared to the public sector in noting down the address of the patients 8.6% (n= 17) in private sector as compared to 31.1% (n=62) in public sector. Only 11 % (n=22) of the prescriptions in the public sector had the patient's vitals. In the private sector this criterion stood at 55.2% (n=110). In regards to prescriber biodata, 77.0% (n=154) mentioned the prescriber's name in the public sector compared to 79.3% (n=159) in the private sector. Address of the prescriber was mentioned in 70.4% (n=141) of public sector prescriptions with none of the prescriptions providing a contact number if a patient needed to contact the prescribing physician. On the other hand, private sector prescriptions contained a phone number and prescriber's address in 98.2% (n=196) of the prescriptions. This can be attributed to physicians using hospital letterhead to write down the medicine; these have the address and phone number of the hospital printed on them. WHO guidelines prescribe that medicine be prescribed under its generic name. In the public sector, drugs were prescribed under their generic names in 1.6% (n=3) of prescriptions and in 5.1% (n=10) of the private sector prescriptions. The private sector mentioned the dosage form in 100.0% (n=200) of prescriptions while public sector mentioned it in 85.2% (n=170). In the public sector, strength of drug and total amount of drug(s) prescribed stood at 70.4% (n=141) and 55.7% (n=111) respectively. The private sector prescriptions had these values at 53.4% (n=107) and 32.7% (n=65).

There was no significant difference in the legibility between prescriptions from both sectors with public sector prescriptions legible at 63.9% (n=128) and private sector at 63.7% (n=127) of prescriptions. Meanwhile instructions/warnings (paired together) were mentioned in 83.6% (n=167) of public prescriptions and 89.6% (n=179) of private prescriptions.

With a p-value of less than or equal to 0.05 being significant, it can be seen from data provided in the table 1 that there were significant differences between prescriptions obtained from the private and public sector (except for legibility). There were no significant differences between the sectors as regards to legibility of the prescriptions and usage of generic drug names to prescribe medication. With regards to prescriber and patient biodata, the private sector fared better than the public sector. Only in the criterion of patient's address did the public sector perform better than the private sector. Regarding the drug dosage, drug form, total amount of drug(s) to be consumed and strength of drug(s), the private sector outperformed the public sector. Private prescriptions provided more instructions and warnings as regards to drug consumption than the public sector. Overall, it can be easily identified that the private sector performed better than the public sector in prescription writing.

Discussion

Prescriptions were examined under WHO guidelines for prescription writing. The main criteria upon which pharmacists can provide patients with medication is legibility of the prescription. In this study, a prescription was classed as illegible when one or more drugs in the prescription were illegible to the author. Though subjective, illegible prescriptions accounted for 36.2%, compared to 23.9% of prescriptions analysed in a study conducted in India.¹¹ Illegible handwritten prescriptions obtained in a study in Saudi Arabia were at 14.88%.¹² In our study, 5.1% of prescriptions from the private sector (private prescriptions) contained drugs under their generic names, as compared to 0% from the study Phalke and colleagues.¹¹ Date the prescription was issued on was mentioned in 65.5% and 91.3% of public and private prescription samples respectively. This is higher as compared to a study of prescription writing conducted in Saudi Arabia by Irshahid where the date was mentioned in 35.7% of prescriptions.¹³ Prescriptions analysed made no mention of any potential drug interactions nor did they mention the registration number of the physician who wrote the prescription. The most

Table 1: Comparison of Prescriptions of Public and Private Sectors.

Variable	p-value
Name of Patient	0.032
Age of Patient	0.021
Address of Patient	0.039
Gender of Patient	0.029
Patient's Vitals	0.048
Generic Drug name	0.067
Strength of Drug	0.041
Dosage form	0.033
Total amount of Drug	0.039
Label: Instructions/Warnings	0.031
Legibility of Prescription	0.057
Name of Prescriber	0.019
Address of Prescriber	0.025
Telephone of Prescriber	0.036

common patient biodata error was of the patient vitals with 88.5% of public sector prescriptions (public prescriptions) missing this data, while in a study conducted in Al-Qassim, Saudi Arabia, this figure stood at 34.27%.¹² Patient vitals, especially weight, are important for children and elderly as this affects pharmacokinetics and pharmacodynamics of prescribed drugs. Drug dosage was mentioned in 85.2% of public prescriptions and 100% of private prescriptions. This is a higher rate when compared to a study conducted in Peshawar, Pakistan where the dosage was mentioned in 63.8% of the prescriptions and directions for drug usage were mentioned in just 10.9%.¹⁴ In comparison, our study found that instructions/warnings (grouped together for convenience) were mentioned in 83.6% of public and 89.6% of private prescriptions. Our study found that just 8.6% of private sector prescriptions mentioned the patient's address. This makes it extremely difficult for hospitals to track patients in case of follow-up. In comparison, public prescriptions mentioned patient address in 31.1% of the cases. This is a slight improvement from a study conducted in Pakistan where the address was missing in 98.3% of prescriptions.¹⁵ There was a lack of mention of age in public sector prescriptions, which could lead to the pharmacist being unable to verify the dosage of the drug which could lead to potential toxic effects in children and the elderly. Age of patient was mentioned in just 39.3% of public prescriptions but in 91.3% of private sector prescriptions. While a value of 100% would be ideal, our study ranked higher than the aforementioned study where the patient's age was mentioned on just 30% of the prescriptions. This study is a novelty study in being the first study to compare prescription writing practices in private and public sector hospitals/clinics in Pakistan. Our study shows that more prescriptions from the private sector had the hospital's address as compared to public sector prescriptions ($p=0.025$). This trend is supported by a study conducted in Nigeria where private sector addresses were mentioned more than public sector ones ($p=0.005$). It was also observed that patient's age was recorded more often in private hospitals than public hospitals ($p=0.015$). Our study concurred with this observation with ($p=0.021$).¹⁶

In our study, none of the prescriptions obtained from both sectors, public and private, were complete. Errors in prescription could be attributed to high patient volume at medical centres where physicians do not have the necessary time to fill out a prescription. A study conducted in China found that higher rates of prescription errors

occurred when there was increased workload ($p<0.001$).¹⁷ The most common error in prescriptions of both sectors was the lack of the usage of generic drug names. The lack of prescription of generic drugs may be attributable to patient belief that generic drugs lack efficacy and poor awareness regarding generic medication.¹⁸ It may also be attributed to the rampant advertising by pharma companies of their brand drugs and offering incentives to doctors to prescribe these drugs. In a study conducted in Nepal, it was found that majority of the patients had poor health literacy and lacked awareness of generic medication. This was also found to be the case in medical students and interns and hence led to lower prescription rates of generic drugs at tertiary hospitals.¹⁹ This places an unnecessary burden on the poor man who may not be able to afford the branded medication.

Conclusions

Prescription writing is dismal despite efforts to the contrary. The private sector performs better than the public (government) sector in prescription writing, but both sectors still fall short of the standards set by the World Health Organisation.

Conflict of interest

None

Funding source

None

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Authors Contribution

NI: Conceptualization of Project

SAM: Data Collection

AA: Literature Search

SG: Statistical Analysis

WB: Drafting, Revision

HP: Writing of Manuscript