



ORIGINAL ARTICLE

Prescription understanding among out-patients in government and private hospitals: A cross-sectional study in Lahore, Pakistan



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Received 28 April 2020; accepted 16 November 2020

Available online 24 February 2021

KEYWORDS

Prescription evaluation;
Prescription understanding;
Patient understanding;
Patient education;
Health education

Abstract

Introduction: Like many other countries, Pakistan's healthcare system is divided into the public and the private sector. According to some studies and the mindset of many Pakistani people, private hospitals provide better services than government hospitals.

Purpose: The paucity of research studies compelled us to compare the understanding of prescription among outpatients of the government and private hospitals since the understanding of prescription by the patient is an important patient care indicator according to WHO.

Method: A cross sectional study was conducted by virtue of convenience sampling. The study included 365 patients; 182 from the government sector and 183 from the private sector. The study was conducted over a period of 3 months. A structured questionnaire was prepared to gather data that was analyzed using SPSS Version 22.0.

Results: Patients from both government and private hospitals got no counseling while only 45.9% of the government hospital patients and 65.9% of private hospital patients were satisfied with the counseling they received. Our study concluded that the role of a pharmacist must be extended besides dispensing only, in counseling and educating patients to reduce the burden on the physicians and hospitals as well.

Conclusion: It was concluded that although the patients of private hospitals scored somewhat better at answering the questions than the government hospital patients but they failed to hit the benchmark. Their slightly better results were attributed to higher education levels and better socioeconomic status rather than better services of the hospital.

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PALABRAS CLAVE

Evaluación de la
prescripción;
Comprensión de la
prescripción;
Comprensión del
paciente;
Educación al
paciente;
Educación en salud

Comprensión de la prescripción entre los pacientes externos de los hospitales gubernamentales y privados: estudio transversal en Lahore, Pakistán

Resumen

Introducción: Como en muchos otros países, el sistema sanitario de Pakistán se divide entre los sectores público y privado. Conforme a algunos estudios y a la mentalidad de los paquistaníes, los hospitales privados prestan mejores servicios que los hospitales gubernamentales.

Objetivo: La escasez de estudios de investigación nos llevó a comparar la comprensión de la prescripción entre los pacientes externos de los hospitales gubernamentales y privados, ya que dicha comprensión de la prescripción por parte del paciente es un indicador importante del cuidado al paciente, según la OMS.

Método: Se realizó un estudio transversal, en virtud de una muestra de conveniencia. Dicho estudio incluyó 365 pacientes: 182 del sector gubernamental y 183 del sector privado, y se llevó a cabo durante un periodo de 3 meses. Se preparó un cuestionario estructurado para reunir datos, que se analizó utilizando SPSS® versión 22.0.

Resultados: Los pacientes de los hospitales gubernamentales y privados no recibieron asesoramiento, a pesar de que solo el 45,9% de los pacientes de hospitales gubernamentales y el 65,9% de los pacientes de hospitales privados estuvieron satisfechos con el asesoramiento que recibieron. Nuestro estudio concluyó que el rol de un farmacéutico debe ampliarse más allá de la dispensa de medicamentos únicamente, asesorando y educando a los pacientes para reducir la carga de los médicos y, también, de los hospitales.

Conclusión: Se concluyó que, aunque los pacientes de los hospitales privados puntuaban ligeramente mejor al responder las preguntas que los pacientes de los hospitales gubernamentales, no lograron alcanzar el punto de referencia. Sus resultados ligeramente mejores fueron atribuidos a unos niveles de formación más altos y a un mejor estatus socioeconómico, y no a unos mejores servicios hospitalarios.

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Introduction

Several studies conducted in the last 20 years have shown that most adults find it difficult to understand common instructions on how to take their medications.¹ Errors in taking medications can have high morbidity and mortality rates which significantly impact the already burdened health-care system. Two reports by the Institute of Medicine—*Preventing Medication Errors* in 2006 and *Standardizing Medication Labels* in 2008, cited poor patient comprehension and subsequent unintentional misuse of prescription drugs as a root cause of medication error, poor adherence, and worse health outcomes.²

According to the United Nation's SDGs, promoting good health and well-being at all ages is essential to sustainable development.³ A very important aspect of achieving this target is ensuring that the medication therapy is successful, for which it is important that patients can accurately comprehend it. Misunderstanding of instructions on prescriptions is common and a likely contributor to medication errors, less effective treatment, and Adverse Drug Events.⁴ Processing the health and drug-related information can be challenging for patients especially those with low education levels.⁵ This may ultimately lead to poor clinical outcomes, significant adverse drug events and compromised quality of life.

Since the 1970s, pharmacists have led programs in teaching patients about how to properly take medications. In Pakistan, however, very few patients receive medication

counseling from pharmacists.⁶ Understanding of drug prescriptions is alarmingly low in the community, even amongst the educated as shown by a study in Karachi in 2013 where 76% of the participants had received at least graduate degrees.⁷ This depicts a gap between physicians and patients which needs to be addressed. Patient counseling by pharmacists has shown to improve patient knowledge, adherence and correct use of medication.⁸ Only a small number of studies have examined the role of pharmacists in patient communication and education even though pharmacists are often viewed as the second-most reliable source of information about medication.⁹ Therefore, this study can help in showcasing the need for pharmacists in enhancing the level of understanding about prescriptions.

Broadly, two sources of health institutions; public sector and private sector are available in Pakistan.¹⁰ The rich and literate mostly prefer visiting private hospitals while those with lower socioeconomic status find it easier to approach government hospitals where only a nominal amount of money is charged.¹¹ Despite being more expensive, according to the Pakistan Social and Living Standards Measurement Survey [PSLM (2004–05)], as many as 67.4% households in Pakistan consult health providers in the private sector when they have health problems.¹⁰ This further strengthens the notion that private hospitals are considered to provide better services. The premise, therefore, is that patients receiving care from private hospitals should have adequate knowledge regarding the medications being

prescribed to them. The objective of this study is to evaluate the differences in comprehension regarding therapy amongst out-patients at government and private hospitals, comparing the tendencies of patients from various educational and socioeconomic backgrounds to understand the information provided through prescriptions by the physicians. To date, no similar study has been conducted in Pakistan. It is not only expected to reveal the understanding of prescription in an average Pakistani patient but also to explore the realities and shortcomings, if any, behind the claims of private hospitals that they provide better services than public hospitals.

Methodology

Study design

A cross-sectional, observational and descriptive study was conducted over a period of 3 months by enrolling a total of 365 patients based on convenience sampling from government and private hospitals of Lahore, Pakistan. Data was collected from three tertiary care hospitals; Mayo Hospital (public sector) plus Farooq Hospital and National Hospital, which are private-sector hospitals in Lahore.

Study population

Only those patients who were visiting the OPD were identified for the purpose of this study since there is well-documented evidence that shows misinterpretation of prescription drugs being far more common in out-patients than in hospitalized patients.¹ The socio-economic classification was based on monthly incomes. Patients were divided into three groups on the basis of education: Group 1 included those who had done graduation or above. Those who had completed matriculation, intermediate or had a diploma were included in Group 2 whilst subjects with no formal education were part of Group 3.

Inclusion criteria

All patients (above 18 years) who were willing to participate in the study with or without complications and sans any mental health issues were included.

Exclusion criteria

Severely ill, visually impaired and those who could not speak in English or Urdu were excluded from the study. Similarly, participants who were not able to provide informed consent were excluded from the study.

Data collection

A structured questionnaire was developed based upon literature review and the current status of prevalent practices in Lahore, Pakistan. It was reviewed by researchers and experts in the field of pharmacy practice, to ensure the face content and validity. The questionnaire constituted patient demographics, basic knowledge and understanding of patients about their prescriptions and some literacy assessment. Every possible effort was made to reduce any

bias by discussion among other researchers. The questions were structured in a manner so as to avoid any ambiguity. Between November 2019 and January 2020, a group of eight pharmacy students, adept in data collection and having comprehensive knowledge of the project, used the questionnaire to obtain patients' understanding of dosage frequency, number/volume of the drug to be taken, duration of treatment, dosage form, route of administration, dose strength, name of the drug, purpose of medication and storage.

Statistical analysis

All analyses were conducted using the Statistical Package for Social Science SPSS (IBM, Version 22). Descriptive statistics was used to determine the fractions and percentages of different variables.

Results

365 subjects were included in the study, 182 and 183 patients from government and private hospitals respectively.

Demographics of patient population in government and private hospitals

In Government hospital, we observed that majority of the respondents were aged between 18–28 years ($n=48$, 26.2%) and 29–39 years ($n=48$, 26.2%) while in private hospitals the highest number of subjects was aged between 18–28 years ($n=63$, 34.6%). In Government hospital, with respect to educational level, a total of 21 (11.5%) patients fall in Group 1, 78 (41.5%) patients in Group 2, and 84 (45.9%) in Group 3 whereas, in private hospitals, a total of 67 (36.8%) patients were in Group 1, 92 (50.5%) patients were in Group 2, and 23 (12.6%) were in Group 3. In Government hospital, majority 118 (64.5%) out of 183 patients understood Urdu and 65 (35.5%) patients understood both languages (English and Urdu). Out of 182 respondents in private hospitals, only 42 (23.1%) patients understood Urdu only and 140 (76.9%) understood both languages. The percentages of female patients in government and private hospital were 66.1% (121) and 42.3% (77) respectively.

Patients' understanding of their prescription in government and private hospitals

In Government hospital, from the 47 (25.7%) patients who could read and understand the names of all their medicines, 18 were highly educated. Out of the 111 (61%) patients in private hospitals who could read and understand the names of all their medicines, 52 belonged to educated group of patients. In Government hospital, almost half percent of patients ($n=89$, 48.6%) were not able to read and understand the name of even a single medicine written in their prescriptions as compared to private hospital in which the percent was only 20.3% ($n=37$). In Government hospital, the strength of all the medicines was in the knowledge of only 21 (11.5%) patients whereas, in Private hospitals, strength was known to 82 (45.1%) patients.

In order to understand the instructions, 66 (36.1%) of the patients in government hospital were helped by their doctors, 26 (14.2%) relied on self-assessment, 24 (13.1%) were approached by the pharmacists, 8 (4.4%) took help from nurses and 59 (32.2%) sought help from their family or friends. In Private hospitals, 100 (54.9%) respondents got help from their doctor, 26 (14.2%) relied on self-assessment, 19 (10.4%) were approached by the pharmacists, 3 (1.6%) took help from nurses and 34 (18.7%) sought help from their family or friends for understanding their prescription. In Government hospital, 145 (79.2%) patients had difficulty in reading their prescriptions and only 84 (45.9%) patients were satisfied with the instructions provided by the hospital staff or other people. On the contrary, in Private hospitals, 92 (50.5%) patients had difficulty reading prescriptions and 120 (65.9%) patients out of 182 were satisfied with the instructions provided to them regarding their medicines.

Discussion

We evaluated the prescription-based knowledge and understanding of out-patients in government and private hospitals of Lahore by asking them about medicine-related information such as dose, timing, strength, the purpose of prescribing and duration of therapy, through a structured questionnaire and compared the results. Mostly patients observed at government hospitals were women, the majority of whom were housewives with little or no education. A total of 84(45.6%) patients had no formal education at government hospitals whilst in private hospitals only 23 (12.6%) of patients were illiterate. This gap was highlighted by a strong correlation between education and the ability to

comprehend prescriptions. Patients with lower literacy levels had greater difficulty in understanding the names of their medicines as only 25.7% could read all the names whereas 61% patients in private hospitals could easily read and understand all the names [Table 1](#).

Almost twice as many patients in private hospitals knew the purpose of the medicine given to them as compared to those from the government hospital. Although the diagnosis, dosage form and route of administration were in the knowledge of most patients from both kinds of health facilities, lesser patients knew about the dose and duration of their therapy from both the sectors. Only a small percentage (2.7%) of government hospital patients did not know about the route of administration and the majority of these were elderly. One important variable that is often overlooked is the strength of medicines. A vast majority from the government hospital was unaware of this with only 11.5% patients knowing the strength of all their medicines. Four times as many patients from private hospitals had knowledge regarding this, however, the majority was still unaware [Table 2](#).

In both types of hospital settings, the patients' age and literacy level affected their ability to read and understand different parts in prescriptions. Even though education was a major determining factor, higher financial status also correlates with a higher understanding of why the medication was prescribed as reported in a previous study.¹² Those with higher monthly incomes and relatively greater literacy level are seen to approach private hospitals where they believe they will get counseled better and ultimately have greater satisfaction with regards to the medicine-related information provided to them.¹³ Even though subjects from private hospitals had slightly more knowledge with regards to each

Table 1 Demographics of patients population.

Characteristics	Government hospital (N = 183)					Private hospital (N = 182)				
		Literacy level				Literacy level				
		Group 1	Group 2	Group3		Group 1	Group 2	Group3		
Age	N (%)				N (%)					
18–28	48 (26.2)	9	26	13	63 (34.6)	11	51	1		
29–39	48 (26.2)	6	22	20	38 (20.9)	23	15	0		
40–50	43 (23.5)	2	14	27	30 (16.5)	13	15	2		
>50	44 (24)	4	16	24	51 (28)	20	11	20		
Gender										
Male	62 (33.9)	10	24	28	105 (57.7)	36	64	5		
Female	121 (66.1)	11	54	56	77 (42.3)	31	28	18		
Understandable languages										
Urdu	118 (64.5)	3	46	69	42 (23.1)	1	24	17		
English + Urdu	65 (35.5)	18	32	15	140 (76.9)	66	68	6		
Monthly income										
<10,000	29 (15.8)	0	6	23	2 (1.1)	0	1	1		
10,000–20,000	64 (35)	2	26	36	16 (8.8)	1	8	7		
11,000–30,000	54 (29.5)	4	30	20	20 (11)	2	15	3		
31,000–40,000	26 (14.2)	10	12	4	27 (14.8)	6	16	5		
41,000–50,000	9 (4.9)	5	4	0	41 (22.5)	19	17	5		
>50,000	1 (0.5)	0	0	1	76 (41.8)	39	35	2		

Table 2 Patients' knowledge about medicines written on their prescriptions.

Medicine variables	Government (n=183)				Private (n=182)			
	All N (%)	>Half* N (%)	≤Half* N (%)	None N (%)	All N (%)	>Half N (%)	≤Half N (%)	None N (%)
Name	47 (25.7)	13 (7.1)	32 (18.6)	89 (48.6)	111 (61)	19 (10.4)	15 (8.2)	37 (20.3)
Dose	112 (61.2)	21 (11.5)	15 (8.2)	35 (19.1)	145 (79.7)	15 (8.2)	8 (4.4)	14 (7.7)
Strength	21 (11.5)	14 (7.7)	30 (16.4)	118 (64.5)	82 (45.1)	22 (12.1)	24 (13.2)	54 (29.7)
Dosage form	148 (80.9)	12 (6.6)	15 (8.2)	8 (4.4)	168 (92.3)	8 (4.4)	2 (1.1)	4 (2.2)
Route of administration	165 (90.2)	7 (3.8)	6 (3.2)	5 (2.7)	173 (95.1)	5 (2.7)	1 (0.55)	3 (1.6)
Purpose of prescribing	58 (31.7)	22 (12.0)	45 (24.6)	58 (31.7)	98 (53.8)	26 (14.3)	27 (14.8)	31 (17)
Duration of therapy	134 (73.2)	16 (8.7)	10 (5.5)	23 (12.6)	163 (89.6)	7 (3.8)	1 (0.55)	11 (6)
Time of taking medicine	105 (57.4)	20 (10.9)	21 (11.5)	37 (20.2)	139 (76)	17 (9.3)	15 (8.2)	11 (6)
Method of taking medicine	158 (86.3)	10 (5.5)	12 (6.6)	3 (1.6)	169 (92.9)	10 (5.5)	3 (1.65)	0 (0)
Storage conditions	113 (61.7)	15 (8.2)	23 (12.6)	32 (17.5)	153 (84.1)	11 (6)	4 (2.2)	14 (7.7)

* ">half" indicates that patients were able to understand information about more than half of prescribed drugs.

* "≤ half" indicates that patients were able to understand information about half or less than half of prescribed drugs.

Table 3 Patients' understanding about their prescription.

Characteristics/Variables	Hospital setting	
	Government (n=183) N (%)	Private (n=182) N (%)
<i>Instructions on prescription</i>		
English	39 (21.3)	69 (37.9)
Urdu	52 (28.4)	35 (19.2)
Both	92 (50.3)	78 (42.9)
<i>Difficulty in reading prescription</i>		
Yes	145 (79.2)	92 (50.5)
No	37 (20.2)	90 (49.5)
<i>Helps in understanding the prescription</i>		
Doctor	66 (36.1)	100 (54.9)
Nurse	8 (4.4)	3 (1.6)
Pharmacist	24 (13.1)	19 (10.4)
Self-assessment	26 (14.2)	26 (14.3)
Others	59 (32.2)	34 (18.7)
<i>Counseling regarding medication</i>		
Physician	53 (29)	55 (30.2)
Pharmacist	28 (15.3)	37 (20.3)
Nurse	14 (7.7)	10 (5.5)
Pharmacy technician	23 (12.6)	19 (10.4)
None	65 (35.5)	61 (33.5)
<i>Satisfied with instructions</i>		
Yes	84 (45.9)	120 (65.9)
No	99 (54.1)	62 (34.1)

aspect, it is not as high as one would expect, considering the price they pay for it [Table 3](#).

Subjects were commonly prescribed 1–3 medicines at government hospitals, with only a few being given more than 6 medicines whereas in private hospitals almost three times as many patients were being prescribed above 6 medicines. Thus, raising the financial burden on patients visiting private hospitals. This could be an important factor in determining

the incidence of adverse drug reactions and lead to a higher rate of medication errors.^{14,15}

A great percentage (79.2%) patients from the government hospital found it difficult to read their prescription whilst 50.5% of patients from private hospitals experienced the same difficulty. One of the reasons for this significant difference can be sloppy handwriting of prescribers which made patients unable to comprehend the information correctly and may also have led to dispensing errors. All the prescriptions that were included in this study from both government and private hospitals were handwritten which made it harder for patients to read and understand the prescriptions given to them regardless of their education level. A study conducted in Saudi Arabia also reported greater incidence of medication errors due to handwritten prescriptions.¹⁶

Half of the patients at private hospitals and much less than half at government hospitals were helped by doctors in understanding the instructions written on their prescription which shows that doctors are unable to provide sufficient time to each patient, leaving them ill-equipped with regards to medication usage. Language barriers were also often ignored as seen in 32 cases at the government hospital and 14 cases at private hospitals where patients only understood Urdu but their prescriptions were written in English, hence making it impossible for them to read. Moreover, 19 patients with no formal education at government hospitals were also given prescriptions in English only. This happened at private hospitals too but in only 4 such cases.

At both kinds of healthcare facilities, a greater proportion of subjects relied either on self-assessment or help from friends and family to understand their prescriptions rather than pharmacists. This may either be because pharmacists are not available or patients are not aware of the services they can provide. Either way, the role of pharmacists in this area is undeniable. When we compared the statistics from both hospital sectors with regards to counseling, it was found that 35.5% and 33.5% patients at government and private hospitals respectively, stated that they had not received any counseling, with only a few being counseled either by doctors, pharmacists or nurses. They were

provided lesser help with regard to instructions or medication use which made their understanding even poorer which is contrary to a study conducted previously in Pakistan that concluded the private hospitals are better providers of healthcare services to people.¹⁷ This depicts the need for pharmacists at our healthcare facilities, both government and private. Pharmacists' services can reduce medication errors and hence adverse drug reactions can be prevented.¹⁵ As far as the patients' satisfaction is concerned, 45.9% of patients from the government hospital and 65.9% of patients from private hospitals were satisfied. Thus, further stressing the fact that enhancing the role of pharmacists may give fruitful results such as better understanding regarding prescriptions, decreased medication errors and eventually, a higher level of patient satisfaction.

Conclusion

Although patients from the private hospitals had more knowledge and understanding regarding every aspect of their prescriptions, it is safe to conclude that it had more to do with higher socioeconomic status, education, and level of awareness rather than the better provision of healthcare services. Those attending government hospitals generally had lower socioeconomic status and lesser literacy level. It was also concluded that patients from a younger age group could apprehend more information with respect to the purpose of the medication, timing, dose, and duration of therapy. Most patients were unaware of the role of the pharmacist in giving instructions on medication usage or counseling and relied either on the physicians' advice or more often self-assessment and help from others.

Further recommendations

This study proposes that misinterpretation of prescriptions is very common in both private and government health care systems since most patients find it difficult to read and understand their prescriptions on their own. Our study puts forward the suggestion to enhance the role of pharmacists besides dispensing only, in counseling and educating the patients with information on how to take medicines in an effective way and also to reduce the burden on physicians at both kinds of hospital settings. Moreover, if prescriptions are available in printed form, it will reduce some of the complications in understanding them.

Conflict of interest

The authors declare no conflict of interest.

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