

Physicians' Instructions to Patients Regarding Medications in a Saudi University Hospital

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Abstract

Objectives: To estimate the proportion of patients who received instructions regarding their medications' functions, methods of administration, dosages, adverse effects, drug-drug interactions, as well as to identify the sources of knowledge concerning medications' instructions. **Methods:** A cross-sectional study was carried out in King Khalid University Hospital (KKUH) in the out-patient pharmacy in 2013. The data collection method includes personal interview with patients who are randomly selected from adults above 18 years of age. The interview was conducted among patients and any person who attends the consultation. **Results:** The sample was 274 patients. Patients who received instructions for drugs' functions 208 (75.9%), method of administration 229 (83.6%), doses of drugs 220 (80.3%), drugs' adverse effects 47 (17.1%), and drug-drug interactions 41 (15%). Sources of medications' instructions were physicians (73.6%), pharmacists (42.3%), patient information leaflets (PILs) (40.5%) and family or friends (12.8%). **Conclusion:** The provided instructions about prescribed medications to patients in KKUH were incomplete that may lead to therapeutic failure.

Keywords

Physicians' Instructions, Prescriptions, Communication, Patients Knowledge

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1. Introduction

It is an ethical and legal obligation for all healthcare workers to inform their patients about the risks of treatment [1]. However, it has been noticed that patients lack the knowledge about their prescribed medications, which was confirmed by many studies [2] [3]. This may lead to therapeutic failure or some complications due to medications' adverse effects or interactions.

In Iran, only 6% has received full instructions with regard to their medications' functions, dosage, and duration of medication intake, potential adverse effects, allergies and drug-drug interactions [4]. Another study in California has found that more than 85% of patients received instructions from their physicians with regard to the following; name, function, method of administration, and duration of intake. Also, the provided instructions relate to medications' adverse effects, what to do if an adverse effect occurs, and interactions were found to be around 60% [5]. While in India, the method and duration of intake related-instructions showed, more or less, lower percentages compared to California (91% and 71.2% respectively) [6].

A study in UK revealed that 66% of patients do not follow their medications' instructions, while only 24% were strictly following them. This is due to lack of explanation of the benefits and risks of the medications clearly, while only few patients understood these issues [7]. Moreover, a study revealed that not telling patients the specific time to take their medications may lead to non-compliance [8].

The statistics of ministry of health in Saudi Arabia which took place in 2011 has shown that numbers of Saudi physicians around are only 21%, which may lead to language miscommunication and misunderstanding of the instructions [9]. Moreover, a lack of similar studies has been noticed in Saudi Arabia. Therefore, this research assesses the provided instructions from physicians in King Khalid University hospital (KKUH) regarding their patients medications.

Objectives

- To estimate the proportion of physicians who provide instructions for their patients regarding the functions, methods of administration, dosage, adverse effects and drug-drug interactions of prescribed medications.
- To identify the sources of medications' instructions that are usually used by patients.

2. Methodology

2.1. Study Design

The study was quantitative observational cross-sectional.

2.2. Study Setting

It was conducted in King Khalid University Hospital (KKUH) in Riyadh at the out-patient pharmacy in 2013.

2.3. Sample Size

The required sample size is estimated to about 310 participants.

2.4. Sampling Technique

The sample was randomly selected from males above 18 years who were waiting in the out-patient pharmacy from 7:30 a.m. to 4:00 p.m. The interview was made with the patients themselves or any other person who attended the consultation. We included female patients, but the interview was completed with the husband or son who attended the consultation due to cultural issues and hospital policies. Persons with refill prescriptions were excluded.

2.5. Data Collection Methods

Data was collected using a questionnaire which was constructed through extensive literature reviews, and was filled using personal interview. The questionnaire is divided into 3 sections, namely: Personal data (e.g.: age, nationality...etc.), Disease and medication(s) related information (e.g.: functions, adverse effects...etc.), and Source of information related questions (e.g.: the usual source of information). A pilot study was conducted to validate the questionnaire. The study was approved by College of Medicine and King Khalid University Hospital Institutional Ethical Committee.

2.6. Data Analysis Plan

Data were checked for completeness and consistency manually. During collection, SPSS software (version 21) was used for data presentation and analysis. Absolute numbers and percentages were used for data presentation. Chi square test categorical variables associations were used for testing significance at 0.05.

3. Results

A total of 302 patients were interviewed in King Khalid University Hospital at Out-patient Pharmacy to fill the questionnaires. Eight patients refused to be interviewed. Among the interviewed 302 patients 274 were accepted and 28 were excluded due to exclusion criteria (91%). Most of the interviewed persons (38%) were middle aged (40 - 59) followed by young aged group (18 - 39) which accounts for 36.9%, and 25.2% for elderly patients. Saudis constituted the majority (93.1%) of the participants. 75% of persons were male patients and 25% were companies of female patients.

Regarding the sources of medications' instructions (**Figure 1**), physicians were the most common (76.3%), followed by pharmacists and PILs (42.3%, 40.5% respectively). Family and friends were the least common source (12.8%).

Figure 2 shows that the information which was received by the physicians was evaluated by the patients as follows: enough (62.4%), intermediate (26.6%) not enough (10.9%). The most common instructions which had

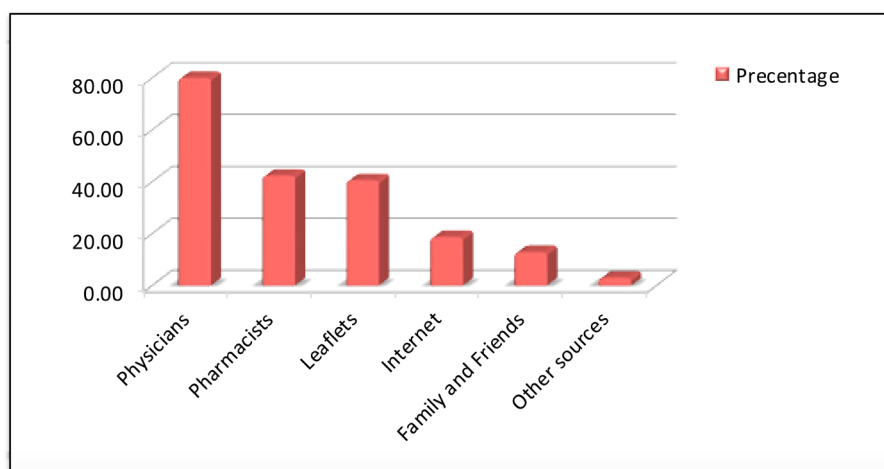


Figure 1. Percentages of common sources of medications' instructions that were utilized by the studied participants in KKUH 2013.

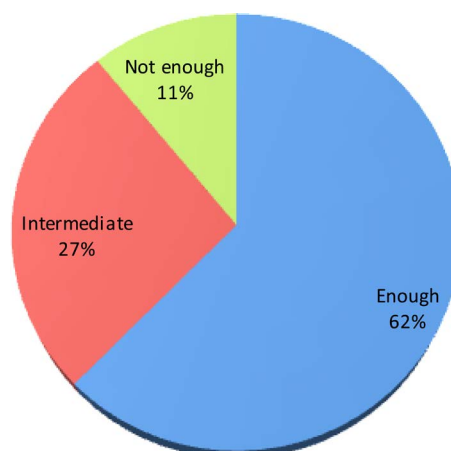


Figure 2. Percentages of overall evaluation about prescribed medications' instructions by the studied participants in KKUH 2013.

been given to patients were method of administration (83.6%) followed by duration of intake (82.9%). On the contrary, drug-drug interactions-related instructions were the most ignored information (15%) (Table 1).

Table 2 explores the association between the amount of information given by treating physician and respondent perception regarding its satisfaction of their expectation. Significance was found in the first five questions namely: medications' names, functions, methods of administration, dosage and duration ($p \leq 0.0001$). Meanwhile, the sixth question, which relates to adverse effects- related instructions showed significance ($p = 0.039$). In this question, the highest score was found in the category "none of the medications" in relation with the evaluation column "enough".

4. Discussion

The current study demonstrates that 70.5% of physicians give instructions about the name of medications. While a study in USA in 2013 shows 96.3% [5]. Lower rate in the current study explained that patients may find some difficulties in recalling some of these names. Also, they may not care that much about their medications' names

Table 1. Medications' received instructions among the studied participants in KKHU 2013.

Questions	All medications	Some medications	None
Did the physician inform you about the name(s) of the medication(s) which were prescribed?	193 (70.5)	11 (4)	70 (25.5)
Did the physician inform you about the function of each medication?	208 (75.9)	26 (9.5)	40 (14.6)
Did the physician provide instructions regarding methods of administration? (E.g. oral, inhaler... etc.)	229 (83.6)	18 (6.6)	27 (9.9)
Did the physician provide instructions related to the medication(s) dosage?	220 (80.3)	17 (6.2)	37 (13.5)
Did the physician provide instructions related to the duration of each medication intake?	227 (82.9)	17 (6.2)	30 (10.9)
Did the physician provide instructions related to the side effects of each medication?	47 (17.1)	12 (4.4)	215 (78.5)
If the answer was "Yes", Did the physician inform you when to stop if these side effects occur? (n = 47)	14 (29.8)	0 (0)	33 (70.2)
Did the physician inform you about the risks of certain medication(s) if was/were taken with other medications?	41 (15)	4 (1.5)	229 (83.5)

Table 2. The relationship between instructions of drug administration process and overall evaluation of the studied participants in KKHU 2013.

Questions		Overall Evaluation number (%)				P-value
		Enough	Intermediate	Not enough	Total	
Did the physician inform you about the function of each medication?	All of the medications	145 (84.8)	52 (71.2)	11 (36.7)	208 (75.9)	0.0001
	Some of the medications	16 (9.4)	9 (12.3)	1 (3.3)	26 (9.5)	
	None	10 (5.8)	12 (16.4)	18 (60)	40 (14.6)	
Did the physician provide instructions regarding methods of administration? (e.g. oral , inhaler... etc)	All of the medications	154 (90.1)	59 (80.8)	16 (53.3)	229 (83.6)	0.0001
	Some of the medications	11 (6.4)	6 (8.2)	1 (3.3)	18 (6.6)	
	None	6 (3.5)	8 (11)	13 (43.3)	27 (9.9)	
Did the physician provide instructions related to the medication(s) dosage?	All of the medications	151 (88.3)	57 (78.1)	12 (40)	220 (80.3)	0.0001
	Some of the medications	11 (6.4)	6 (8.2)	0 (0)	17 (6.2)	
	None	9 (5.3)	10 (13.7)	18 (60)	37 (13.5)	
Did the physician provide instructions related to the duration of each medication intake?	All of the medications	154 (90.1)	56 (76.7)	17 (56.7)	227 (82.8)	<0.0001
	Some of the medications	11 (6.4)	6 (8.2)	0 (0)	17 (6.2)	
	None	6 (3.5)	11 (15.1)	13 (43.3)	30 (10.9)	
Did the physician provide instructions related to the side effects of each medication?	All of the medications	37 (21.6)	9 (12.3)	1 (3.3)	47 (17.2)	0.039
	Some of the medications	9 (5.3)	3 (4.1)	0 (0)	12 (4.4)	
	None	125 (73.1)	61 (83.6)	29 (96.7)	215 (78.5)	

as long as they know the shape of the packets or the pills.

About three quarters of patients in this research have received instructions about functions of all prescribed medications, while the new USA study revealed that 99.1% were given instructions about medications' functions [5]. In India, on the other hand, the percentage was lower than this study's result (61.3% and 75.9% respectively) [6]. This might be due to low level of awareness in our community compared to USA. Therefore, physicians may find it difficult to explain to patients the benefits of each medication despite being one of their responsibilities.

In regards to the dosage-related instructions, 44% has received instructions about the issue in Iran [4] compared to the present finding (80.3%). This variation between the current results and the results in Iran is probably because the study data was restricted to patients attending the outpatient pharmacy, while in Iran samples were collected from community pharmacies. According to the present results, occupation and educational level appears to be statistically significant in relation to dosage instructions ($p = 0.032$, $p = 0.046$, respectively).

In USA 93.1% received instructions on the method of administration [5]. On the contrary, a dramatically low percentage in Iran showed that only 10% of patients who go to community pharmacies were provided with instructions regarding method of administration [4]. In the current research, it was 83.6%. In Amsterdam a research showed that around half of inpatients have received instructions regarding the method of administration [10]. This shows that patients in the outpatients' pharmacy have been more informed with regard to the method of administration compared to inpatients' and community pharmacies' patients. Logically, inpatients are less informed on this due to their being under direct supervision of healthcare workers. Regarding community pharmacies, most of the patients there refill their medications, so they are supposed to be already informed by their main source. Gender, nationality and occupation in this study were found to be statistically significant in association with method of administration in the current work ($p = 0.008$, $p = 0.029$, $p \leq 0.001$, respectively).

Concerning the duration of treatment in the current work, it was shown that 82.9% of patients were informed. Similarly, a research in California showed that 89.3% of patients were knowledgeable about this [5]. While a study in Iran showed a very dramatic variation with 9% only were given instructions from community pharmacies [4]. The reason behind the high percentage of knowledge in the current results may be due to that most of our community patients have chronic diseases, which make them use their medications for life.

With regard to the adverse effects of the instructions, California study revealed that 61% of patients received instructions from previous appointments [5]. Meanwhile, the current research showed a lower percentage (11.9%). This low level of patients' knowledge in our community is probably because physicians are afraid that their patients' may not be adherent to their treatment plans if they were informed about their adverse effects. Whereas, some studies showed a higher level of non-compliance among patients who were NOT given clear instructions regarding the risks of their medications, which conflicts our justification about physicians' thoughts [7] [11].

The present study revealed that only 15% were informed about drug-drug interactions while a study in Switzerland in 2007 showed that about 50% knew about these interactions [12]. The low percentage of knowledge in current study findings is because the instructions regarding the prescribed medications were only obtained at the point of the interview. Therefore, we would have no information if a patient takes other medications. In contrast, we think that the high percentage in Switzerland is because the sample included people who were taking prescribed medications and over-the-counter (OTC) at the same time.

Regarding the common sources of medications' instructions, majority of the patients in the present study reported physicians as a source of information (76.30%). A study in Iran showed that physicians were one of the least common sources of medications-related instructions (22%), whereas family and friends were the most common source [4]. A study by Miina Holappa revealed that physicians were the most common source of information (68%) [13]. In the current study, the reason for physicians being the most common source of information is that they are considered a very reliable source, and thus are also responsible for patients' health.

Pharmacists and PILs were the next preferred sources in the present study which account for about 40%, although only 11% of patients in another study by Vivian F. in UK have chosen pharmacists as their primary option [7]. In contrast, pharmacists have a bigger value in Finland as a preferable source of instructions [13] [14].

In Iran, it has been found that there is lack in the use of PILs, which accounts for only 14% of their patients. The reason could be associated with low educational level [4]. Unlike this study, leaflets were the most common source of information in Finland (74%) due to the ease of obtaining the information without the need to visit physicians [14]. The possible reason for different percentages between the present study and the other studies

regarding functions of PILs is thought to be due to the big proportion of elderly people in Saudi Arabia, who are illiterates.

The current study demonstrates that 18% of patients use internet as an additional source of their medications' instructions. Another published study in Finland also supports the present study by revealing that 20% of patients preferred internet as their source of information [14]. In comparison to these findings, other conflicting studies by Vivian F. and Forouz Nader in Iran showed dramatic decline in the percentages (6% and 1% respectively) regarding the use of internet [4] [7].

A published study in Finland showed that 24% of patients choose family and friends as a source [14]. Furthermore, the current study revealed a small portion of persons who trust their relatives and friends as a major source of their medications (12%). On the other hand, in like manner, 41% of other studies in Iran selected family and friends [4]. From our point of view, family and friends are considered an unreliable source to obtain instructions.

Finally, the last significant value (adverse effects) shows the opposite results by regarding the evaluation column "enough", which reveals the highest percentage among patients who were NOT given any instructions about this issue. This is probably because some patients are over-confident about their treating physicians and this could be as a result of low awareness level of those patients. Another possible reason is that we don't know if the prescribed medications have some sort of adverse effects. Therefore, this study has many limitations ranging from collection of data from various participants, may be patients or companions, particularly for females due to cultural reason.

5. Conclusion

The present study concluded that the provided instructions about prescribed medications to patients in KKHU were incomplete. Instructions of adverse effects and drug-drug interactions were frequently missed, and this may lead to therapeutic failure or other complications.

6. Practice Implications

Give physicians more time with their patients by increasing the numbers of physicians and clinics or decreasing the allocated number of patients per physician. Also increase patients' awareness about the information needed regarding their medications by media, campaigns, brochures and improving school curriculum.

A couple of hours may be assigned for each physician to answer his/her patients' concerns via email, phone or meeting. A new service may be provided by hospitals which are concerned with patient's needs of information regarding their medications.

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