

## Adherence to the standards of prescription chart among medical practitioners in Kurdistan region

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### Abstract

**Background and objective:** Controlling medications safely, effectively and efficiently is essential to the delivery of high-quality care. This study aimed to point up prescription errors such as scientific or brand names, the strength of medications, the age of patients, date of prescriptions, specifying dose, dose interval, dosing frequency and dosage form, through systematic studying a certain number of prescriptions.

**Methods:** This study screened the prescriptions from both of public and private sectors in the governorates of Erbil, Sulaimaniyah and Duhok. Adherence was assessed on the basis of these prescriptions charts. Excel program was utilized to evaluate the data in this study.

**Results:** The study covered a total 283 prescriptions involving 976 medications in Kurdistan region. Only 19% of medications were mentioned as a scientific name and just 2% of prescriptions were written via computer. Direction for use of the medicines was only mentioned for 3% and the duration of treatment was scripted in 11%.

**Conclusion:** Majority of medical practitioners in Kurdistan region are not adhering to the international standards of prescriptions.

**Keywords:** Prescription; Kurdistan doctors; Adherence.

### Introduction

“Increasing the effectiveness of adherence interventions may have a far greater impact on the health of the population than any improvement in specific medical treatments” is a statement by Haynes et al. which is quoted by WHO (World Health Organization) in 2003 report on medication adherence.<sup>1</sup> Almost 50% of patients with chronic illnesses do not adhere to their prescribed medication.<sup>2</sup> This in turn increases the rate of morbidity and mortality. It also increases the cost of prescribed medication on chronic illnesses for up to \$100 billion per annum.<sup>3</sup> Hippocrates’ incitements to the physician to “not only be prepared to do what is right himself, but also to make the patient... cooperate” has completely not been followed for more than 2000 years.<sup>4</sup> Nowadays, the medical system is more complicated which does not encourage physicians to act in parallel with patients to

manage these chronic illnesses. Most studies have illustrated that one of the beneficial ways is to engage pharmacists. However, limited research has explored the best ways to integrate pharmacists into teams and the inter-professional factors to be considered. There are many factors, such as combining education, enhanced professional roles and computerized tools, to decline prescribing errors most effectively.<sup>4</sup> Managers and health professionals are always looking for ways to improve the quality and safety of healthcare. Medicines are key components of healthcare and errors relating to medication may impact on patient safety. This evidence scan explores what is being done to reduce prescribing errors.<sup>2</sup> There could be many forms of prescribing errors. Nonetheless, the common prescribing errors include incorrect doses, illegible details or ordering inappropriate medications or drugs that may react with

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other medications already being taken.<sup>4</sup> A process whereby a doctor, nurse and other registered professionals order for medications and illustrate how to use them is called prescription. Although prescription refers mostly to ordering medications, it equally applies to medical imaging, laboratory tests, eye glasses psychological treatment or introducing healthy lifestyle that will help in maintaining general well-being.<sup>5,6</sup> Prescription is a document that includes patients' information, the prescribed treatment and the signature of the doctor. Computerized or hand-written prescription conveys what the doctors have prescribed to the pharmacist or anyone else who dispense medication. In most countries, prescribers are doctors of various specialties, but it could be clinical pharmacist, clinical psychologists, nurse practitioners, assistant physicians, dentists, optometrists and podiatrists in some countries.<sup>7,8</sup> Prescriptions could aid people stay healthy or manage long-term conditions or emergency situations. Nevertheless, as with other components of healthcare, prescriptions are also subjected to error and can cause unintended harm. Medication errors are one of the most common patient safety issues and one of the most common types of medication errors is prescribing errors.<sup>9,10</sup> The prescription is a written message from a doctor that officially tells pharmacist to dispense a certain medicine(s). To convey the message in the best way and to avoid possible errors and misunderstandings, it has to stick to certain standards. Prescription errors have been noticeably increasing lately in Kurdistan region. This study aimed to highlight the main prescription errors through a systematic study of a certain number of prescriptions; scientific or brand name, the strength of medications, the age of patients, date of prescriptions, specifying dose, dose interval, dosing frequency and dosage form. Besides, restricted medications clarity of the handwritings will be main parameters that will be measured qualitatively and

quantitatively through comparing them with the standards of writing a prescription. The results of this study might help authorities in the Ministry of Health to commence an action plan to reduce the possible errors in dispensing medicines that happen secondary to not implementing standards of writing a prescription.

## Methods

In this study, 283 prescription charts were collected from both public and private sectors in the governorates of Erbil (115), Sulaimaniyah (113), and Duhok (55). They were prescribed by medical practitioners of different specialties, including internal medicine specialists, gynaecologists, dentists, surgeons, otolaryngologists and nephrologists. These prescriptions were both quantitatively and qualitatively analyzed, which included the ratio of drug names written in the brand to that written in scientific, clarity of handwriting, mentioning the name of the patient, age of the patient, strength, dosing frequency, timing of administration, duration of treatment and date of prescription. Data were collected and analyzed using Microsoft Excel software and the differences were calculated. For checking legibility and handwriting of the prescription charts, the charts were shown to three pharmacists (experience not less than eight years), and the decision was made when two pharmacists agreed on the degree of legibility of the prescription chart. This study was approved by the Ethics Committee in the College of Pharmacy of Hawler Medical University with the approval number HMU-PH-EC-16 on June 15<sup>th</sup>, 2015.

## Results

Two hundred eighty-three prescriptions that contained 976 medicines were collected from physicians of different specialties practicing in Kurdistan Region in Iraq. Table 1 demonstrates the distribution of these prescriptions according to the specialties of the

physicians with most prescriptions were made by internal medicine doctors, gynaecologists and surgeons (28%, 23% and 26%, respectively). The majority of prescriptions (98%) were written with the hand as expressed with only 5 (2%) prescriptions were written by computers. Only 3% (34 drugs) of medications were prescribed with their directions for use (before or during or after the meal), whereas 97% of medications (942 drugs) were prescribed not including their directions for use as exhibited. The duration of treatment was mentioned for only 11% of the prescribed medicines. A hefty 89% of medicines were prescribed without mentioning their duration of

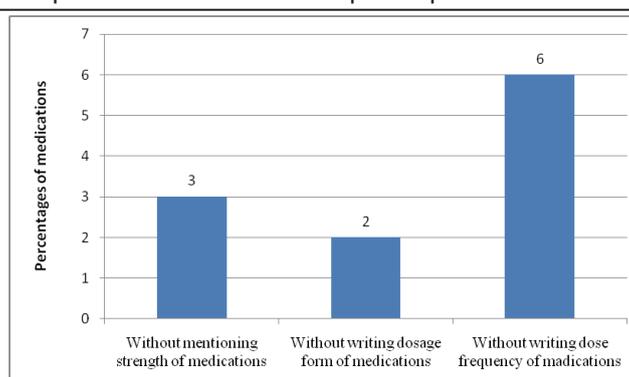
treatment. Eight-one percent of prescribed medicines were written in brand names while only 9% of prescribed medicines were written in scientific names. The majority of prescribed medications were readable (91%), while 9% of prescribed medicines were illegible. Patients' names were missing in 20 prescriptions (7%). The date was missing of prescriptions in 19 prescriptions (6%) as shown in Table 2. Thirty-three medicines (3%) were written without mentioning drugs' strength. Two percent of medications were prescribed without writing drugs' dosage form. Sixty-seven medications (6%) of medicines were written without stating the dose frequency of drugs as shown in Figure 1.

**Table 1:** Showing the percentages of each specialty among 283 prescriptions.

Specialty of doctors	No. of prescriptions	(%)
Internists	80	(28)
Surgeons	74	(26)
Gynaecologists	65	(23)
Dentists	25	(9)
ENT physicians	24	(9)
Nephrologists	15	(5)

**Table 2:** Frequency and percentages of parameters regarding prescription.

Characteristic	No. either of prescriptions or medicines	(%)
Handwritten prescriptions	278 prescriptions	(98)
Not mentioned directions for use of the drugs	942 medications	(97)
Without mentioning the duration of treatment	871 medications	(89)
Medications written in brand names	789 medications	(81)
Illegible medications	92 medications	(9)
Missing the name of patients	20 prescriptions	(7)
Missing the date of prescriptions	19 prescriptions	(6)



**Figure 1:** Showing the percentages of drugs without prescribing its strength, dosage form and dose frequency.

## Discussion

Prescriptions should only be written when it is necessary, as it usually contains medicines that are crucial for the patient to get better with the ailment that he is suffering from, and that can only be achieved if it sticks to certain criteria that have been imposed by drug regulatory authorities. In this study, the guidelines that have been mentioned in British National Formulary (BNF) were chosen to be used as a standard for comparison. In the BNF guidelines, it has been mentioned clearly that instructions for administration should be clearly mentioned on the prescription chart, taking medicines before, during or after the meal. This may affect the rate of absorption of the drug that is why it's crucial to let the patient know when to take the drug. It is clear in the results that only 3% of the doctors are sticking to the standards of mentioning directions for use of the drugs, whereas the supreme majority appears to be careless about mentioning them.<sup>11</sup> The names of drugs and preparations should be written clearly and not abbreviated, using approved titles only. In spite of the spread of computer aids, most of the prescriptions are still hand written. Results also show that only 91% of the prescribed drugs were legible and 9% were completely unclear. Besides, only 2% of the drugs were written with computer and printer, while 98% were hand written. This could be a source of a huge number of avoidable errors.<sup>12</sup> The results of errors were derived from unclear handwriting, which can be solved through one of two ways; trying conscientious approach with the authoritative help, or a fast act towards computer-based systems, to end up with the highest rate of legible prescriptions.<sup>13</sup> It should be said goodbye to handwritten manuscripts in medical notes, whether legible or not. The generic name is the name of the active ingredient in the medicine, which is decided by an expert committee and is understood internationally.<sup>14</sup> Thus Paracetamol or Acetaminophen is a generic name while

Panadol is a brand name. In the pharmacies, usually, a single or few brands of a drug are available. That is why prescribing of generic names is recommended because if brand names are used and that particular brand is not available, the pharmacist will have to refer drug indexes like BNF, Medscape to find out the ingredient and then dispense from the available brand. This could lead to waste of time and may result in errors in case the wrong drug ingredient is dispensed.<sup>15</sup> This study shows that only 19% of the drugs were written in generic names, and as its been mentioned before, this will lead to an increased rate of the dispensing errors and a waste of time. It might also end up with a financial loss of the patient as brand name drugs are usually much more expensive than generic ones.<sup>16</sup> Duration of the treatment together with drug strength are crucial for the treatment if the patient does not stick to the duration or the strength. Consequently, this will lead to the failure of the treatment even if diagnosis and prescribed name are correct. That is why BNF states that in the prescription chart the quantity to be supplied may be stated by indicating the number of days of treatment, and also the strength or quantity to be contained in capsules, lozenges, tablets, etc. should be stated by the prescriber. Regarding the percentage of prescriptions without mentioning drug strength, this study shows terrible results; the number of medications without prescribing its strength was 33% and those without dosage form and dose frequency were 19% and 67%, respectively. Moreover, 19% of the total prescriptions were lacking the date of prescribing, and this, in turn, will lead to a lack of information that needs to be available to complete the duration of the treatment.

## Conclusions

It can be concluded that the majority of medical specialists in Kurdistan region are not adhering to the international standards

of prescriptions. This non-adherence includes ratio of drug names in brand and scientific, clarity of handwriting, mentioning name of the patient, age of the patient, strength, dosing frequency, timing of administration, duration of treatment, date of prescription, concomitant drug prescription. The concerned authorities like the syndicate and the Ministry of Health must put an action plan to decline the incidence of non-adherence. This could possibly be done through new applicable regulations that should be implemented through syndicate in the public sector.

### Conflicts of interest

The authors report no conflicts of interest.

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