

# Investigating the Difficulties Faced by Iraqi Pharmacists in Interpreting Medical Prescriptions : Interpretation Perspective<sup>1</sup>

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## ABSTRACT

The profession of medicine is one of the best and noblest professions in society, and it is the profession of merciful hearts that works in the service of humanity to relieve people of their aches and pains. The profession of doctors is one of the most difficult professions in society, and it is one of the humanitarian professions that society greatly needs. In this research paper, the study reviews the medical errors committed by pharmacists for mistranslating the medical prescription correctly. This results in medical errors that patients fall victim to, and this in itself is a great harm. In addition, the study assumes that the reason for these errors is either in the doctors for not writing the prescription clearly or because of Pharmacists for not translating it correctly. The primary aim of this study is to identify solutions to the difficulties associated with interpreting mistakes brought by some pharmacists. Both qualitative and quantitative samples are used in the investigation. The quantitative samples relate to 10 Pharmacists in Diwaniya City while the qualitative samples are embodied in the relevance theoretic approach (Sperber & Wilson, 2002). As a guide for this work, it pursues Newmark (1988) with his translational strategies. The study proposes that recipe should be written on ideal rules because it is related to the humanity souls with clear handwriting\ typing with system of symbols acceptedly among pharmacists. This cognition process of good interpreting or grasping the contents of prescription very important in order to accomplish the aforementioned aims. The analysis demonstrates that many either pharmacists depend on mutual codes between them and doctors or they depend they rely on guesswork and this generates serious medication errors because this field does not bear guesswork or codes exchanged between pharmacists and doctors. It is also challenging to interpret a medical text when it is written in symbols or codes.

According to the methods used, the study distinguishes between appropriate and problematic interpreting and identifies possible solutions to the prescription's interpretation difficulties.

**Keywords :** *Medical Errors; Pharmacists; Medical Prescription; Mistranslating; Interpreting Mistake*

## INTRODUCTION

As human beings, we entrust our health and well-being to healthcare professionals, including pharmacists. They are responsible for dispensing medicines that help us recover from illness or deal with chronic illnesses. But what happens when these providers get the prescription wrong? The consequences of medication errors can be serious and even life-threatening. This study examines the difficulty in understanding these errors caused by misinterpretation of prescriptions by some pharmacists. Medication errors can have a significant impact on patient health and safety. Pharmacists play an important role in ensuring the accuracy and safety of drug prescribing. However, some pharmacists may have difficulty interpreting prescriptions accurately, which can lead to medication errors. The purpose of this article is to examine the challenges faced by pharmacists in identifying medication errors caused by misinterpretation of physician prescriptions.

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## Relevance Theory

In keeping with pragmatism, Sperber and Wilson (2002) developed a new theory. Taking the core notion of Grice's theory of communication and the four concepts included within it, and developing it (which will be detailed in more depth later). Simply put, Sperber and Wilson (1995: 260–66) claim that communication and cognition are the two general claims about the function of relevance that serve as the foundation for relevance theory. The goal of human cognition is to maximize relevance.

According to Clark (2013:5), relevance theory can be summed up in three questions that it seeks to address:

- a. How can we successfully understand meanings that are not expressed explicitly?
- b. How can we identify the presumptions that speakers are explicitly communicating?
- c. Why do we occasionally fail to understand what the other is saying ?

Relevance theory aims to demonstrate how a listener infers an interlocutor's meaning from the information provided. In other words, the language of a communication interacts with the context to inspire the audience to study the meaning communicated. According to relevance theorists, a message's text is only a guide that invites the public to investigate relevant components. The text is just the edge that protrudes above the surface if meaning is communicated by an iceberg, and the iceberg as a whole holds the whole meaning.

This fits in with the subject of the study especially point C. This is consistent when the pharmacist does not understand what the doctor writes in the prescription because of ambiguity, bad handwriting, or the similarity of some drug terms to similar reasons.

## The Newmark (1988) Translational Model

Newmark (1988) is the model used for translation along with its techniques. Newmark asserts that the translator begins by reading the source material in order to determine its subject matter and to evaluate it from the viewpoint of a "translator," which is distinct from that of a linguist or a literary critic.

To select a suitable translation method and identify particular and recurring issues, the translator must determine the text's intent and how it is written (1988:11)

According to Newmark, the translator only highlights the text that presents a challenge for translation while keeping in mind that it is always helpful to research a given object first in context, then separately as if it were a single entry in a dictionary or encyclopedia, and finally in context once more. The translator then connects translating theory to practice. ( Ibid)

This is consistent when the pharmacist does not understand what the doctor writes in the prescription because of ambiguity, bad handwriting, or the similarity of some drug terms to similar reasons. In this study, we apply what Newmark said, the pharmacist takes the role of the translator, so that the study mechanism is clear.

## The Translation Strategies

(Newmark, 1988:81) provides a thorough list of techniques used in problem solving. One of the most important approaches in translating sentences and other smaller linguistic units. When a translator employs translation techniques, the translation process can be effective and efficient. Think about the following strategies:

- |  |                             |
|--|-----------------------------|
| 1. Transfer  | 9.Paraphrase                |
| 2. Equivalent in culture   | 10.Couples                  |
| 3.Neutralization (i.e., a descriptive or functional equivalence) | 11.Notes                    |
| 4. Literal interpretation  | 12.Modulation               |
| 5. Label   | 13. Synonyms                |
| 6. Naturalization  | 14.Transpositions or Shifts |
| 8.Reduction and Expansion  | 15.Descriptive Equivalent   |
| 7. Compensation  | 16. Loan Translation        |

## Effects of Misinterpreted Medical Prescriptions on Patient Health

Misinterpreting medical prescriptions can have serious consequences for a patient's health. The study found that medication errors may be the cause of death (Harris,2014:69) .These mistakes not only hurt patients, but also affect healthcare costs and readmission rates (Shamliyan, 2008:43)

Pharmacists play an important role in preventing these mistakes by interpreting and dispensing medicines according to the doctor's instructions. However, some pharmacists have difficulty understanding complex medical terms and prescription abbreviations, which can lead to medication errors and drug interactions (Bates, 1998:289). It is imperative that the pharmacy team prioritize communication and cooperation between prescribing physicians and donors to ensure the accuracy of drug administration while keeping legal and ethical responsibilities in mind. Effective strategies such as reconfirming prescriptions with colleagues and using technology can help improve the accuracy of prescription interpretation and ultimately reduce drug-related harm to patients (Jheeta, 1917:20)

### The role of pharmacists in preventing medication errors

Pharmacists play an important role in preventing medication errors. They are responsible for correctly interpreting the doctor's instructions and administering the appropriate medication to the patient (Sebastianelli,2003:55). However, prescription misunderstandings can occur due to a variety of factors, including illegible handwriting, incomplete information, and confusion between similar drug names (Gelaw,2014:25). Furthermore, pharmacists face time pressure and distraction, which can lead to errors (Franklin 2008:9).

To prevent medication mistakes, pharmacists need to have a thorough understanding of drug interactions, dosages, and side effects (Nuckols,2014:78). They also need access to up-to-date drug information and the ability to communicate effectively with prescribers and patients. Ongoing education and training programs help pharmacists stay abreast of new drugs and best practices in pharmacy operations. By following these steps, pharmacists can help ensure that patients receive safe and effective medications (Sokol, 2006:645-646).

## STRATEGIES FOR IMPROVING PRESCRIPTION INTERPRETATION AND DISPENSING ACCURACY:

### Training program for improving prescription reading skills of pharmacists

A training program for pharmacists that focuses on improving prescription interpretation skills can significantly reduce medication errors due to physician misinterpretation of prescriptions. These programs offer a variety of educational activities, such as practice interpreting recipes and hands-on experience using actual recipes. (Weiss, 2012:50) In addition, regular continuing education courses on best practice in pharmacy practice are encouraged to keep pharmacists up to date with the latest developments in the field. By investing in these types of training programs, pharmacies can ensure that their staff have the knowledge and skills necessary to deliver safe and accurate medications to patients (Escrivá, 2019:19)

### Introduction of technology to reduce medication errors in pharmacies

The introduction of technologies such as electronic prescription systems and barcode scanners can greatly reduce medication errors due to misinterpreted prescriptions. These systems can alert pharmacists to potential drug interactions, administration errors, and other problems before the drug is dispensed (Van Doormaal, 2009:25)

Additionally, automated dispensing machines ensure that the correct medication and dosage are dispensed, further reducing errors. While these technologies may require an initial investment, they ultimately save pharmacies money by reducing costs associated with medication errors and improving patient outcomes. Overall, technology can play an important role in improving prescription interpretation and dispensing accuracy in pharmacy practice (Ridley, 2004:59).

### Importance of clear communication between physicians and pharmacists

Clear communication between doctors and pharmacists is important to prevent medication errors due to misunderstanding of the doctor's instructions. Effective communication helps pharmacists resolve ambiguities about prescriptions, but also enables doctors to provide the additional information they need to ensure safe and accurate dispensing. Collaboration among medical professionals also helps identify potential errors before they occur, ensuring that patients are receiving the correct medication and dosage. By establishing open lines of communication and working together, physicians and pharmacists can improve patient safety and reduce the risk of medication errors due to misinterpretation of physician orders. (Hardstone 2004:51).

### **Role of quality control measures to ensure correct dispensing of prescriptions**

Quality control measures play an important role in ensuring correct prescription dispensing, reducing medication errors and promoting patient safety. One such measure is to double check prescriptions before issuing them to patients. A second pharmacist or pharmacy technician checks the prescription for errors or discrepancies that may have been overlooked during the first interpretation. (Souza 2014:4 ). In addition, the introduction of automated dispensing systems, barcode scanning technology and other technical assistance will improve accuracy and reduce human error when filling prescriptions. These quality control measures not only increase patient safety, but also increase healthcare providers' confidence in their ability to provide quality care (Koster 2014:36).

### **Importance of communication and collaboration in the pharmacy team**

Effective communication and collaboration are essential to avoid medication errors in pharmacy operations. (Shrank,2007:43). The pharmacy team must work together to ensure that prescriptions are correctly interpreted and dispensed. This includes clear communication between pharmacists, prescribing physicians and patients, and proper documentation of medications and administration instructions (Choi I, 2016:12).

### **Collaboration with other health care providers is also important.**

Interdisciplinary teamwork it helps identify drug interactions and contraindications that may have been overlooked only by the prescribing physician or pharmacist.

In addition to verbal communication, technology can also help improve collaboration between pharmacy teams. Electronic prescribing systems and medication management software help reduce errors by providing accurate information on dosages, drug interactions, allergies and patient medical history. (Ibid:20)

By emphasizing effective communication and collaboration within the team and with other healthcare providers involved in patient care, pharmacists reduce the risk of medication errors while promoting the safe and effective use of medicines for patients. You can (ibid.).

### **Legal and ethical implications of medication errors in pharmacy practice**

Medication errors in pharmacy operations cannot be ignored. Patients affected by medication errors have the right to take legal action against the pharmacist, pharmacy, or healthcare provider responsible for prescribing or administering their medication. In addition to potential lawsuits and financial harm, pharmacists may also face disciplinary action from state licensing boards for violating professional standards. (Bates, 1999:313).

From an ethical perspective, pharmacists have a duty to ensure that patients receive safe and effective treatment. Improper interpretation of prescriptions not only puts patients' health at risk, but also undermines public confidence in the profession as a whole. To minimize the legal and ethical risks associated with medication errors, pharmacies should implement comprehensive quality assurance, error reporting and continuous improvement policies and procedures. In addition, pharmacists must stay up-to-date with the latest laws related to their prescription dispensing practice to avoid penalties from regulatory and law enforcement agencies (ibid).

## **METHODOLOGY AND DATA ANALYSIS**

### **Introduction**

This chapter presents the research model and methods and procedures used in this study. It describes the data analysis processes used to realize research question and objectives. The study use prescription selected by Google and distributed to 10 pharmacists in Diwaniya city are chosen randomly . It is then evaluated based on a theoretical relevance approach updated to best fit the medical situation and logic. In addition, the descriptions of selected prescriptions by pharmacists are also analyzed according to the Newmark translation model (1988)

### **The study question:**

Why do we occasionally fail to understand what the other is saying ?

### **Data Analysis and Translation**

Below, we apply relevance theory and a modified model of translation to the selected sample.

Shown in the tables below:

**Table No. (1) Medication Prescription by Pharmacists**

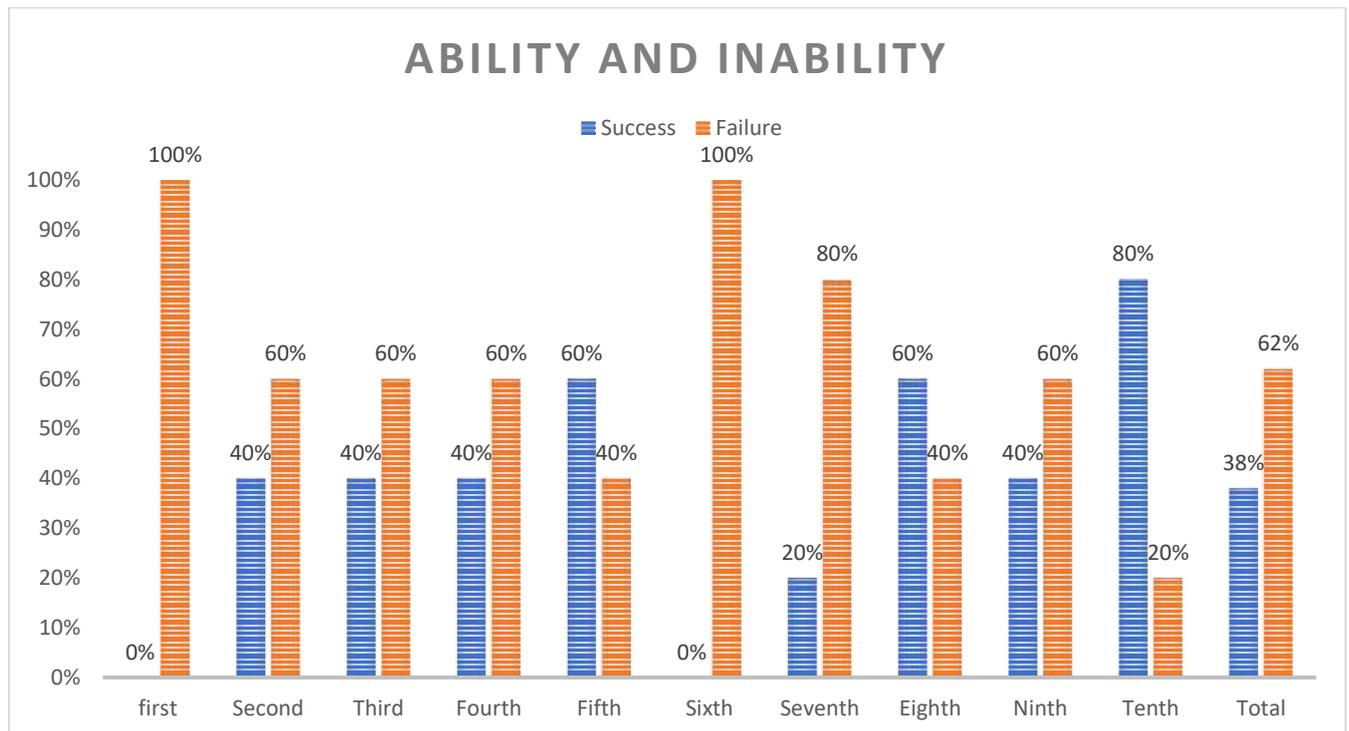
No.	Sample1	Sample2	Sample3	Sample4	Sample5
1	No	No	No	No	No
2	No	Ceftriaxone	Lansoprazole	No	No
3	No	No	No	polymyxin	Gramicidin
4	Naproxen	No	Lamotrigine	No	No
5	Naproxen	Gabapentin	No	No	Gramicidin
6	No	No	No	No	No
7	No	Cyclobenzaprine	No	No	No
8	No	Cephalexin	Lansoprazole	polymyxin	No
9	No	Cephalexin	Lamotrigine	No	No
10	nalidixic acid	Ceftriaxone	Lansoprazole	penicillin	No

**Table No. (2) Strategies used by pharmacists**

pharmacists	The Strategy of Translation	Appropriateness
first	No Strategy	-
Second	Compensation	+
Third	Transfer	+
Fourth	Label	-
Fifth	Label	-
Sixth	No	-
Seventh	Modulation	-
Eighth	Transfer & Compensation	+
Ninth	Label	-
Tenth	Compensation & functional equivalence	+

**Table No.(3) Ability and Inability Rate by Reading the prescription**

pharmacists	Success	Failure
first	0%	100%
Second	40%	60%
Third	40%	60%
Fourth	40%	60%
Fifth	60%	40%
Sixth	0%	100%
Seventh	20%	80%
Eighth	60%	40%
Ninth	40%	60%
Tenth	80%	20%
Total	38%	62%



**Table No. (4) Percentage of appropriate and inappropriate strategies used by pharmacists to understand prescription**

The Strategy	Frequency	Appropriateness	Success	Failure
Compensation	18%	+	30%	\
Transfer	12%	+	20%	\
Label	18%	-	\	30%
Modulation	6%	-	\	10%
functional equivalence	6%	+	10%	\

**DISCUSSION:**

From the tables shown above in this chapter, the study is shown the following:

The first and sixth pharmacists do not use any strategy and could not know the description or read the recipe, and the failure rate was 100%. As for the second, eighth and tenth pharmacists, they used the compensation strategy and reaped varying success rates because they use different strategies in terms of appropriateness. For example, the second pharmacist has a success rate is 40% as shown in Table No. (3) and failure 60%. The eighth has a success rate of 60% and the failure is 40%. The tenth has a success rate of 80% and a failure is 20%. For the third pharmacist, he has a success rate of 40% and use a Transfer strategy, and the failure rate is 60%. Finally, the fourth, fifth and ninth pharmacists used the Label strategy. And they harvested a 100% failure rate because it is an inappropriate strategy to prescribe the prescription correctly.

**Findings:**

**The Study found Potential Difficulties and Challenges:**

1. **Illegible Handwriting:** One common challenge faced by pharmacists is deciphering illegible handwriting on medical prescriptions. Poor handwriting can lead to misinterpretation and errors when dispensing medications. Efforts to improve legibility through electronic prescribing systems or standardized prescription forms can help alleviate this issue.

2. **Abbreviations and Symbols:** Medical prescriptions often contain abbreviations and symbols that may vary in interpretation. Pharmacists must be knowledgeable about commonly used medical abbreviations and symbols to ensure accurate understanding of prescriptions. Ambiguity or misinterpretation of these abbreviations can lead to medication errors.
3. **Language Barriers:** In multicultural healthcare settings, language barriers can hinder accurate interpretation of medical prescriptions. Pharmacists may struggle to understand prescription instructions due to language differences, potentially leading to errors in medication dispensing. Clear communication channels and access to interpretation services can help mitigate this challenge.
4. **Drug Name Similarities:** Some medications have names that are similar in spelling or pronunciation, increasing the risk of errors. Pharmacists must exercise caution to differentiate between drugs with similar names to avoid dispensing the wrong medication. Implementation of barcode scanning systems and Computerized Physician Order Entry (CPOE) can assist in minimizing these errors.
5. **Complex Prescriptions:** Prescriptions can sometimes involve complex dosing regimens, multiple medications, or conflicting instructions. Pharmacists need to carefully analyze and interpret these prescriptions to ensure accurate dispensing. Additional resources such as drug information databases, consultation with healthcare providers, and collaboration among the pharmacy team can help in clarifying and understanding complex prescriptions.
6. **Time Pressure and Workload:** High workload and time pressure in pharmacy settings can contribute to errors. Pharmacists may feel rushed to process prescriptions, increasing the likelihood of misinterpretation. Adequate staffing levels, efficient workflow processes, and supportive work environments are essential to mitigate these challenges.

## Conclusion

Medication mistakes resulting from misinterpreted medical prescriptions can have serious consequences for patient health and well-being. As frontline healthcare providers, pharmacists play a critical role in preventing these errors and ensuring that patients receive the correct medications in the right doses. However, there are many challenges that pharmacists face in their daily practice that can contribute to medication errors. By implementing strategies such as double-checking prescriptions, improving communication and collaboration within pharmacy teams, and staying up-to-date with the latest research and best practices, pharmacists can help reduce the incidence of medication mistakes and improve patient outcomes. Ultimately, it is essential for all healthcare professionals to prioritize patient safety and work together to provide high-quality care that meets the needs of each individual patient. Investigating the difficulties in grasping medication mistakes caused by misinterpreting medical prescriptions is crucial for improving patient safety. By addressing challenges such as illegible handwriting, language barriers, ambiguous abbreviations, drug name similarities, complex prescriptions, and workload pressures, healthcare systems can enhance the accuracy and effectiveness of medication dispensing. Future research and interventions should focus on developing strategies and technologies that facilitate clear communication, reduce errors, and support pharmacists in their crucial role.

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**Conflict of Interest:** None

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APPENDIX

These samples are taken randomly from the Google browser:

<p><b>Typical Handwriting</b></p>	<p><b>Non-typical Prescription (not understandable)</b></p>																
<p><b>Typical Printed</b></p> <table border="1" data-bbox="199 1176 598 1355"> <thead> <tr> <th>Drug</th> <th>Strength</th> <th>Frequency</th> <th>Duration</th> </tr> </thead> <tbody> <tr> <td>amoxyl 450 mg</td> <td></td> <td>1</td> <td>3 أيام</td> </tr> <tr> <td>Coamol Syrup 450mg</td> <td>3 ملعقة</td> <td>2</td> <td>7 أيام</td> </tr> <tr> <td>Phloxar 4mg</td> <td>5 مرات</td> <td>2</td> <td>7 أيام</td> </tr> </tbody> </table>	Drug	Strength	Frequency	Duration	amoxyl 450 mg		1	3 أيام	Coamol Syrup 450mg	3 ملعقة	2	7 أيام	Phloxar 4mg	5 مرات	2	7 أيام	<p><b>Non-typical Prescription (coding)</b></p>
Drug	Strength	Frequency	Duration														
amoxyl 450 mg		1	3 أيام														
Coamol Syrup 450mg	3 ملعقة	2	7 أيام														
Phloxar 4mg	5 مرات	2	7 أيام														