

Good, Bad And The Ugly; Dispensing Accuracy Of The Pharmacists Based On The Good, Legible And Illegible Handwriting Prescription Patterns Of Physicians.

Dr.N.SureshBabu¹, Dr. N.P.Sireesha², Dr. CH SanthiLakshmi³, Dr.S.Vinutha⁴.

¹(Department of Pharmacology, Andhra Medical College,Dr.NTRUHS,INDIA)

²(Department of Pharmacology, Andhra Medical College,Dr.NTRUHS,INDIA)

³(Department of Pharmacology, Andhra Medical College,Dr.NTRUHS,INDIA)

⁴(Department of Pharmacology, Andhra Medical College,Dr.NTRUHS,INDIA)

Correspondent Author: Dr. N.P.Sireesha

Abstract:

Introduction: It's no secret that many doctors have poor handwriting. While we sometimes joke about the difficulty in reading doctors' scrawl, it's no laughing matter. In fact, it can lead to deadly mistakes. In 1999, one example quickly made the headlines. A cardiologist (heart doctor) had given a middle-aged man a handwritten prescription for 20 mg of Isordil (isosorbide) to be taken every 6 hours. The man needed this medicine to prevent episodes of heart pain that could lead to a heart attack. However, the doctor's handwriting was hard to read (see photo), and the purpose of the medicine was not on the prescription. A pharmacist misread Isordil as Plendil (felodipine), a medicine used to treat high blood pressure. The man suffered a heart attack after taking high doses of Plendil every 6 hours for 1 day, and not taking Isordil as prescribed. He died a few days later. We therefore decided to examine the prescription patterns of the health care providers and the dispensing accuracy of the pharmacists.

Aim: To study the dispensing accuracy depending on handwriting patterns of the prescribing physicians.

Methods: After obtaining approval from the IEC and valid informed consent, the participants were recruited into the study. Prospective, single blind, observational study of accuracy of the dispensers based on three handwriting patterns the good, bad and the ugly prescriptions. **Results:** Good handwriting prescriptions are dispensed with 96% accuracy. Bad handwriting prescriptions are dispensed with 8% accuracy. 54% of the bad handwriting group are given a totally unrelated compound. 38% of the bad handwriting group said that they don't know the drug. Ugly handwriting prescriptions are dispensed with 0% accuracy. 30% of the ugly handwriting group are given a totally unrelated compound and 70% said that they don't know the drug.

Conclusion: Bad and ugly handwriting practices resulted in dispensing errors which will result in adverse outcomes to the patients sometimes leading to death. Hence electronic prescriptions are encouraged wherever feasible and physicians, pharmacists and patients should be educated on how to reduce such errors.

Keywords: Pharmacists, prescription, Awareness, dispensing, health-care providers.

Date of Submission: 02-04-2019

Date of acceptance: 17-04-2019

I. Introduction

The true fact is that so many doctors have horrible hand writing¹. But it's not a simple matter. Handwriting doesn't play a major role in most people's carrier, but in the medical field, it can cost life and death. Illegible hand writing prescriptions accounts for many medication errors. Most mistakes boil down to human error. Doctors, notorious for bad handwriting, may choose the right drug, but the pharmacist may read it incorrectly, and the pharmacist dispenses what he reads, not knowing that it's the wrong drug. A study carried out by the Institute of Medicine (IOM) concluded that in the US, more people die in a given year as a result of medical error than road accidents or AIDS². And according to the Institute for safe Medical Practices (ISMP) in the year 2000, indecipherable or unclear prescriptions resulted in more than 150 million calls from pharmacists to physicians asking for clarifications, which is a time consuming process that could delay important treatments, as well as lead to injury or even death. These mistakes could also cost those involved. In 1999 in Texas, a jury awarded a woman \$4, 50,000 because her husband died from taking wrong medication due to his doctor's poor penmanship and the pharmacist mistakenly giving him the incorrect medication as a result³. Despite the computer revolution much information in clinical records continues to be hand written⁴. The doctor may understand what has been written, but difficulties may arise to other parties. Only few studies however have been reported on the legibility of medical documents and these largely about prescriptions. We therefore

decided to examine the prescription patterns of the health care providers and the dispensing accuracy of the pharmacists.

II. Aims And Objectives

To study the dispensing accuracy depending on handwriting patterns of the prescribing physicians. To study the dispensing accuracy of the pharmacists depending on the legibility of the physician prescriptions.

III. Materials And Methods

Study design and study population: After obtaining approval from the IEC and valid informed consent, the participants were recruited into the study. Prospective, single blind, observational study.

Sample size: 20 prescriptions, 50 pharmacies.

20 Physicians who are practicing in Visakhapatnam, Andhra Pradesh are randomly selected. After explaining the study and taking an informed consent, each of them is asked to write a dummy prescription containing Telmisartan 40 mg and Metformin 500 mg in their own usual handwriting. The prescriptions such collected are arranged in an order starting with good hand writing and ending with the worst one.

Selection of subjects:

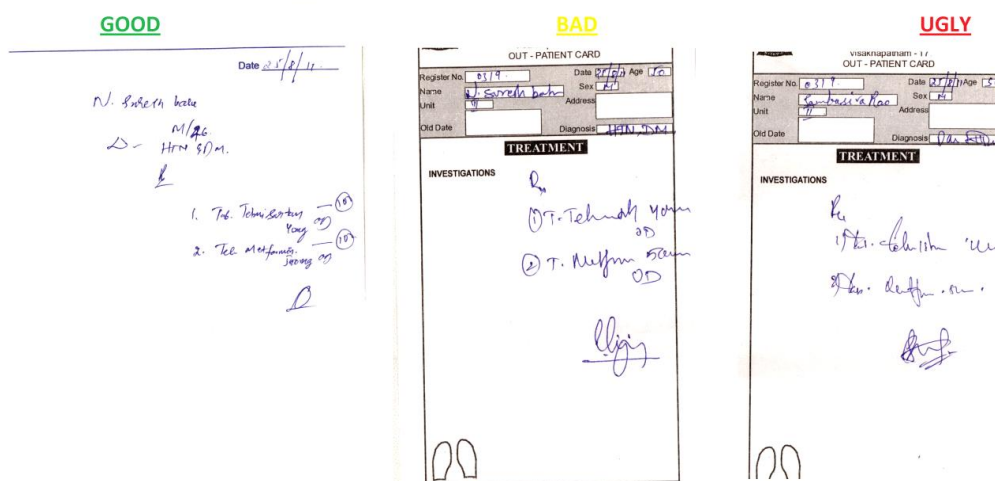
- Inclusion Criteria:**

Only pharmacies in and around Visakhapatnam are included.

- Exclusion Criteria:**

A pharmacy where the drug is not available is excluded from the study.

Conduct of study: The prescription with the best handwriting among them is selected for GOOD (legible) category, the one with the worst handwriting is selected for UGLY (illegible) category and the prescription midway between both the best and the worst is selected for BAD (illegible) category.



The prescriptions from GOOD, BAD and the UGLY categories are run through 50 Pharmacies individually in and around Visakhapatnam. The dispensing drugs are observed, checked whether the correct drug is dispensed or an incorrect drug is dispensed. The data such collected is charted out in the table below.

S.No	Shop name	Address	Code	GOOD			BAD			UGLY		
				Correct	Wrong pr	Don't kno	Correct pr	Wrong pr	Don't kno	Correct pr	Wrong pr	Don't kno
1												
2												
3												
4												
5												

Statistical analysis: Statistical analysis was done using descriptive statistics. All statistical calculations were performed using Microsoft Excel and the statistical package for Graph pad Prism version 8.0.

IV. Results

The dispensing accuracy with the Good, Bad and Ugly handwriting groups is 96%, 8% and 0% respectively. Wrong drugs are dispensed in 2%, 54% and 30% of Good, Bad and Ugly handwriting groups respectively. Whereas 2%, 38% and 70% of Good, Bad and the Ugly handwriting groups could not identify the drug in the prescription.

V. Discussion

Indeed, poor handwriting of doctors is riskier than the poor handwriting of non-doctors. The price we pay for illegibility includes lower quality of care, a waste of resources and professional time, potential legal problems or even death of the patient⁵. Since, average handwriting is not totally safe or clear in medical care; we must seek other ways to solve this problem. Doctors should write the prescriptions with clear legible handwriting. Doctors should not use any abbreviations in their prescriptions. If doctors are busy with their practice they can keep an assistant for prescription writing or they can use electronic prescription techniques⁶. From the grass root level, medical students should be inculcated the discipline of good handwriting prescriptions. If the pharmacist cannot understand the prescription he has to tell the patient to ask his doctor to write the prescription legibly, and the pharmacist is not supposed to give what he thinks. If the pharmacist cannot understand the prescription he has to communicate and clarify with the doctor. Patient should not hesitate to clarify their doubts with their consultant doctor regarding the prescription which include name of the drug, dose, route of administration and its usefulness. After purchasing the drugs from the pharmacist the patient should make necessary clarifications from their consulting doctors.

VI. Conclusion

Bad and ugly handwriting practises resulted in dispensing errors which will result in adverse outcomes to the patients sometimes leading to hospitalization. Hence electronic prescriptions are encouraged wherever feasible and physicians, pharmacists and patients should be educated on how to reduce such errors.

References

- [1]. Horrible Handwriting: Horrible Mistakes Posted on 20 April 2007.st George's university.
- [2]. Prescription Error: It can cost a life, GK NEWS NETWORK
- [3]. Bad penmanship can lead to medical errors, institute for the study of health care organizations and transactions.
- [4]. Illegible handwriting in medical records. F Javier Rodri'guez-Vera MD Y Mari'n MD A Sa' nchez MD C Borrachero MD E Pujol MD J R Soc Med 2002;95:545-546
- [5]. A CASE DUE TO ILLEGIBLE PRESCRIPTION, FarukAsicioglu, Assoc. Prof., Chairman of 5 th Committee, Council of ForensicMedicine, Ministry of Justice, Istanbul, Turkey, J Punjab Acad Forensic Med Toxicol 2011; 11(1)
- [6]. A Complete Prescription Writing SoftwareNovember 24th, 2008 Posted by: Prescription.

Dr. N.Suresh Babu. "Good, Bad And The Ugly; Dispensing Accuracy Of The Pharmacists Based On The Good, Legible And Illegible Handwriting Prescription Patterns Of Physicians." IOSR Journal of Dental and Medical Sciences (IOSR-JDMS), vol. 18, no. 4, 2019, pp 49-51.