

# Study of Rational and Irrational Prescribing In Different Government and Private Health Care Centers

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## Abstract

To treat patients, alleviate symptoms, and prevent further sickness, doctors rely heavily on prescriptions. It's also a difficult intellectual challenge to choose from among the many thousands of treatment options accessible a plan that's suited for each of the infinitely diverse individuals they see. Unfortunately, poor patient outcomes are often the result of poor medication selection and dosing regimens. The purpose of this article is to shed light on some of the most frequent prescription mistakes and to provide a reasonable strategy that involves defining the objectives of treatment, choosing the best treatment option, and closely monitoring the effects of that treatment. A patient's health and quick recovery are dependent on taking the correct medication at the correct time. The study's goal was to undertake a full examination, systematic analysis, and results of drug inconsistencies that emerge as a result of incorrect prescription in a hospital context.

**Keywords:** *Irrational Drug Combinations, Polypharmacy, Rational Use of Medicines, Awareness, Doctors.*

## 1. INTRODUCTION

While irrational use of medications causes health dangers and wastes resources that are already scarce in most health care systems, the rational use of medicines contributes to high-quality health care. It has been described an issue beyond logic that continues and is difficult to remove because of the irrational usage of drugs. It is essential to provide on-going education and training that includes feedback, monitoring, and reinforcement. To combat irrational medication usage, it is vital that everyone involved be educated on the proper and right ways to utilize medications. Prescription data collection helps to identify and address drug-related issues and so aids to rational drug usage (RDU). Since there aren't enough doctors, nurses, and other medical professionals with the proper training and resources available in underdeveloped nations, drug abuse is still a major public health issue there. Globally, antibiotic resistance, incorrect prescription, inappropriate distribution, and inappropriate use of medications by patients are the most pressing public health issues.

World Health Organization (WHO) says "irrational use of medicines indicates that patients get pharmaceuticals unsuitable to their clinical circumstances, dosages not that match their needs for the intended duration," On a global scale, more than half of all medications are given incorrectly, and only half of patients take their medication as directed. When the WHO's drug use indications are not satisfied, irrational drug use ensues. Public health throughout the globe is harmed by people using the improper or needless drugs. This may lead to reduced treatment results, medication resistance, higher treatment expenses, and mortality. There are a variety of ways to reduce and prevent these pharmaceutical mistakes, including the establishment of committees to draft policies on RDU, adequate implementation, and enforcement of clinical recommendations, continuous monitoring, and review of drug usage use.

In order to assess drug use trends in healthcare facilities in poor countries, the WHO created drug use indicators.

It is simpler to measure the fundamental markers of drug use since they are less likely to change through time and location. The issue of excessive drug usage is one that affects the whole world. Prescriptions for brand-name drugs, polypharmacy, excessive usage of antibiotics, and excessive injections are a few of the issues. Prescriptions for medications with brand names seem to be more common in India, according to research on the country's drug market.

Increased medication–drug interactions (ADRs), poor patient adherence because of pill load, and needless high drug expenditures are all connected with polypharmacy. Medication resistance and drug costs are increased when antibiotics are overprescribed and when injections are overused, which may lead to the spread of infectious illnesses like HIV/AIDS and Hepatitis B. Aside from that, injectable drugs are more costly than their oral counterparts.

## 2. LITERATURE REVIEW

**Legese Melku et. al, (2021):** Half of the world's medicines are used inappropriately, and only half of patients take their prescription as prescribed. Antibiotic resistance, pharmaceutical treatment issues, and a rise in drug expenditures are all consequences of inappropriate drug usage. The purpose of this research was to examine irrational medication usage in the outpatient pharmacy of Debre Markos Referral Hospital. The research was conducted in a hospital setting using a cross-sectional design. Samples were taken via systematic random sampling. A checklist was used to gather the information. We used EPI Data Version 3.1 and SPSS Version 20 to analyze the data. The data was analyzed using descriptive statistics and logistic regression. There were 2.14 medications prescribed for every patient visit on average. Antibiotics were prescribed in 39.3 percent of patient encounters. It was found that 62.2 percent of prescriptions included polypharmacy, and injections were administered in 13 percent of those prescriptions. 95.5 percent of prescriptions were for generic medications. Multivariable logistic regression showed that polypharmacy was linked with comorbid conditions, professional training, and prescribing experience. Antibiotic prescription was substantially linked with patient age, comorbidity, chronic illness presence, professional training, and disease type. Antibiotics were being overused and polypharmacy was prevalent, according to our research. Prescription surveys and regular workshops on rational prescribing are advised to reduce irrational medication usage.

**Z. Al Qamariyat (2021):** Drug abuse is a major public health issue that affects people all over the globe. Patients are given pharmaceuticals that fulfill their clinical needs, at dosages that satisfy their requirements, quickly, and at the lowest possible cost to themselves and their area, as defined by rational use of drugs. One of the most prevalent drug use concerns nowadays is drug abuse, polypharmacy, and misuse. A wide range of factors may lead to drug abuse at all levels, from prescription errors to over-the-counter treatments. When money is misused, it may result in actual bad financial outcomes. There is a plethora of bizarre medicine concoctions on the market. Personal satisfaction and improved local health services may be achieved via the proper and logical use of drugs. Countries throughout the world may rationalize the distribution and purchase of medications by using a WHO-recommended list of essential medicines. This would reduce the costs to healthcare systems around the world. It's been a problem for years since irrational drug usage has a negative impact on the health care system and on patients. Patients, prescribers, dispensers, health systems, supply chains, and regulators all have a role in the irrational use of medications. To combat both illogical and reasonable drug usage, several measures have been used.

**Amber G et. al, (2019):** One of the fastest ways to give medication is via intravenous infusions (IV). Hospitals are typical places for them to go, but they also come with a slew of major risks. The purpose of this research is to determine whether or not patients in a tertiary care hospital are aware of the benefits of intravenous infusion and whether or not it is used appropriately. Cross-sectional research was conducted on 249 people in a comfortable manner. As a way to validate the need for IV infusions, we looked at the patient's level of dehydration, vomiting, and diarrhea, all of which were severe. The information was gathered via the use of a questionnaire and verbal permission. The data was analyzed using descriptive statistical analysis and displayed in tables and figures using means, frequencies, and percentages. A total of n249 people (100%) took part in the study, with n68 men (27.3 percent) and n181 women (72.7 percent) averaging a combined age of 24.05 years and 14.21 years. Females n76 (30.5 percent) outnumbered men n40 (16.1) in the sample of n116 (46.6 percent) unreasonable users, a difference that was statistically significant ( $p=0.018$ ). However, there was no statistically significant change in the other factors (age groups, profession, education, awareness and rational or irrational use of IV infusion). Doctors were the most prevalent unjustified IV infusion prescribers, n105 (90.5 percent). IV infusions were found to be more common in our setting than previously thought, according to the research. Doctors seemed to be the most common source of illogical IV prescriptions. This is a declaration that should not be ignored. Females, adults, and students under the age of 18 are more likely to be injected with illogical IV fluids than those of any other age group.

**Richard Ofori-Asenso and Akosua Adom Agyeman (2016):** In the delivery of healthcare, medications are an essential component. Many nations spend a large amount of their total health care budgets on these pricey items. Many health systems across the globe face a serious issue due to the irrational use of drugs. Patients may be placed at danger and valuable resources may be wasted as a consequence of these activities, which are likely to result in

poor health care delivery. Health care professionals, policymakers, patients, and the general public all have a critical role to play in addressing the difficulty of "rational use" of medication. Using rational medication usage, proper prescription and dispensing, and some of the causes that lead to irrational use as well as the possible consequences of such behaviors, this article summarizes essential principles. The purpose of this article is to provide health professionals, patients, policymakers, and the general public with a succinct, easy-to-understand explanation of the fundamental ideas of medication usage.

**D Brahma et. al, (2012):** Irrational medication usage is a worldwide problem. Rational drug usage is ensuring that patients get the medicine they need, at the right amount and duration, at the lowest possible cost to them and the community as a whole. The most typical difficulties associated with today's drug usage include overuse, polypharmacy, and inappropriate use. The prescribing errors and over-the-counter drugs can lead to irrational drug use at various levels. Irrational medication usage may have major health and financial repercussions. The Indian market offers a wide variety of bizarre drug combinations. Improved health and quality of life can be achieved through the proper implementation of rational drug use.

### 3. METHODOLOGY

A cross-sectional investigation was conducted. The research was conducted in the government district headquarters in Gujranwala, Wazirabad, and Okara, as well as many private clinics in those locations. Private clinics and government hospitals were both represented in the study. If we divide the total number of patients by the number of cities, we arrive at the conclusion that each city receives 100 patients. Patients with diabetes, hepatitis, ischemic heart disease, malaria, hypertension, and tuberculosis were excluded from this investigation. Only these patients were allowed to participate in our research, while the others were omitted from the group. A total of 400 participants were included in the trial, which excluded all other patients with these conditions. University of Sargodha's research committee accepted our study and provided us permission to gather and analyze data using a variety of factors. Patients' pharmacological data was gathered from their ward history records. Patients who were prescribed rational drugs and those who were prescribed irrational medications made up the majority of our research. To conduct our research, we gathered prescriptions from clinics and hospitals and examined them in accordance with a set of questions that we had written.

### 4. ANALYSIS

#### Evaluation of prescription on the basis of health care units

Prior to anything else, we assessed our findings based on the number of patient care units involved (Clinics and Govt. Hospitals). We used a sample of 200 patients from each hospital's various care facilities. When we collected patients from clinics, we found 86 men and 114 women; in hospitals, the numbers were 95 men and 105 women. To get a sense of how rational and irrational prescription is in a certain clinic, we looked at the prescribing patterns of the patients in question. 25.5 percent and 74.5 percent of prescriptions were reasonable and irrational, respectively, at government hospitals. Table 1 and Figure 1 demonstrate these findings. Table 1: Results.

#### Prescriptions evaluation on the basis of economic status of patients

**Table 1: Evaluation of prescription on the basis of health care units**

Health care units	Number of patients	Gender		Rational		Irrational	
		Male	Female	Total	Percentage	Total	Percentage
Clinics (Private)	200	86	114	126	63%	74	37%
Hospitals	200	95	105	51	25.50%	149	74.50%

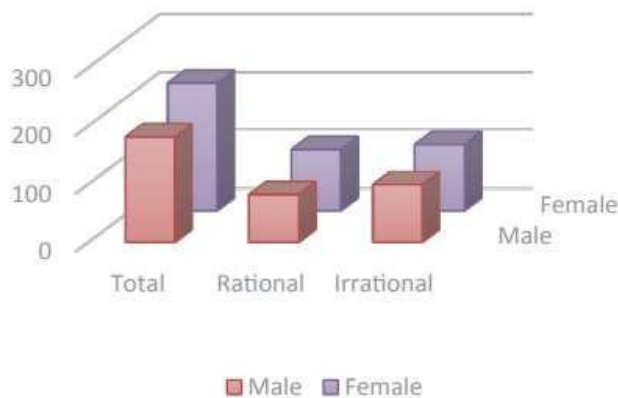


Figure 1: Evaluation of results on the basis of sex.

**Evaluation on the basis of cities**

We used the cities of Indore, Bhopal, Jabalpur, and Gwalior as the foundation for evaluating our research. A total of one hundred patients from each city were included in this study. 50 patients from clinics and 50 from government hospitals were selected for each city. In Gujranwala, Okara, Wazirabad, and Hafiz Abad, rational prescription was 48, 41, 45, and 43 percent; irrational prescribing was 52, 59, 55, and 57 percent; and a combination of the two was found in Gujranwala, Okara, Wazirabad, and Hafiz Abad (Table 2).

Table 2: Evaluation on the basis of cities.

Cities	Number of patients	Health care units		Rational	Irrational
		Clinics	Hospitals		
		(Private)			
Indore	100	50	50	48	52
Bhopal	100	50	50	41	59
Jabalpur	100	50	50	45	55
Gwalior	100	50	50	43	57
Total	400	200	200	177 (44.25%)	223 (75%)

**Patients/Prescription evaluation on the basis of Economic Status**

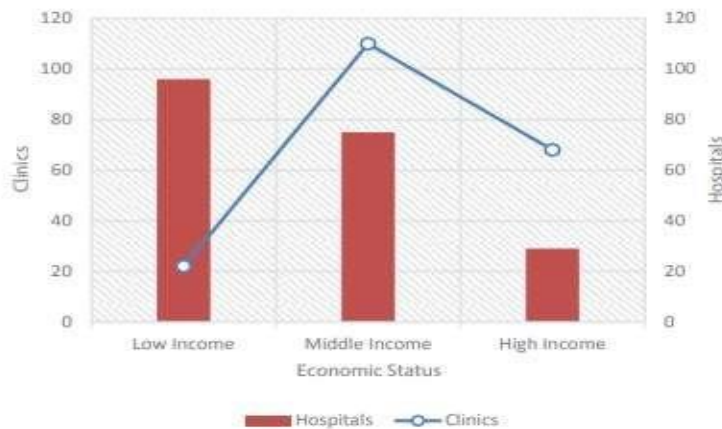


Figure 2: Evaluation of prescriptions on the basis of Pharmacoconomics.

In this case, patients are assessed based on their financial situation, which is discovered through direct communication with them. We then establish a criterion stating that patients with an annual income of under \$20,000 fall into the low-income category, those earning between \$20,000 and \$50,000 fall into the middle-income category, and those earning over \$50,000 fall into the high-income category. We concluded that the majority of low- and middle-income people favored government hospitals because they were more financially accessible. Findings based on our research show that 22 of the 68 patients who favored clinics had incomes between low and high income. On the other hand, 96, 75, and 29 low-income, middle-income, and high-income patients favored hospitals, respectively (Figure 2).

## 5. DISCUSSION

Based on cities and health care facilities, including hospitals and medical centers, prescriptions are evaluated for Pharmaco economics studies in order to determine the reasonable and irrational prescribing of medicines. Male and female prescriptions are included, and the female-to-male ratio in various health care settings is higher than the male-to-female ratio. More over three-quarters of private clinics practice rational prescription compared to just one- third of hospitals, according to the findings (25.5 percent). As a general rule, the percentage of prescriptions that are sensible and irrational is 44.25% and 55.75%, respectively. Because India is developing country, we deduced from our research that there aren't many well-established health care facilities to ensure excellent health. The cost of treatment in clinics is more than in hospitals, thus patients prefer to go to the latter. The issue, however, is illogical prescription. Pharmacoeconomics should be taught to health care professionals, including MBBS, Pharm- D and nursing, in order to improve coordination amongst health care providers and to ensure that pharmaceuticals are prescribed based on pharmacoeconomic considerations. Patients' health and financial well-being will benefit from logical prescription, which is more common than irrational prescribing. Reducing the total cost of treatment is the goal of sensible prescription.

## 6. CONCLUSION

In addition to promoting health concerns, the inappropriate use and non-prescription selling of drugs may lead to significant adverse occurrences including drug side effects, excessive costs and difficulties. Non -prescription sales and irrational medication usage are both immoral and unacceptable. Health System to its precrisis state is essential to halt the practice of non-prescription sales and illogical prescribing, as well as to educate the populace and physicians about the sensible use of medications.

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