JOURNAL OF INTERNATIONAL SCIENTIFIC RESEARCH
Volume 3, Issue 5, October 2025 Online ISSN: 3030-3508
https://spaceknowladge.com

PRESCRIPTIONS AND DRUGS

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Received:14.11.2025
Revised: 15.11.2025
Accepted:16.11.2025

KALIT SO'ZLAR:

prescriptions, drugs, healthcare, prescribing behavior, medication adherence, pharmacovigilance

ANNOTATSIYA:

Prescription drug use has become a cornerstone of modern healthcare, yet inappropriate prescribing, misuse, and lack of adherence continue to pose serious health risks. This study aimed to analyze recent trends in prescription drug use, focusing on prescribing behavior, patient adherence, and the impact of policy regulations. A systematic review of 45 peer-reviewed articles published between 2015 and 2024 was conducted using databases such as PubMed and Scopus. The findings reveal a consistent increase in polypharmacy, particularly among elderly populations, alongside rising concerns about antibiotic resistance and opioid dependency. Evidence suggests that electronic prescribing systems and pharmacist-led interventions improve prescription accuracy and patient safety. The study concludes that effective prescription management requires a combination of digital innovation, continuous prescriber education, and patient engagement strategies to optimize drug therapy and minimize adverse effects.

Introduction

Prescription drugs represent one of the most important achievements of modern medical science. They are medications that can only be obtained with authorization from a licensed healthcare professional, such as a doctor or pharmacist. This system ensures that each drug is used safely, effectively, and appropriately for the patient's medical condition.

Prescriptions serve as a critical bridge between diagnosis and treatment, allowing healthcare providers to select the right medication, determine the correct dosage, and monitor the patient's response over time.

In recent decades, the use of prescription drugs has increased dramatically across the world. This growth is largely due to medical advancements, population aging, and the rising prevalence of chronic diseases such as diabetes, cardiovascular disorders, and depression. At the same time, the pharmaceutical industry continues to develop new and more effective drugs that improve quality of life and extend life expectancy. However, this progress also brings new challenges, including medication errors, overprescribing, counterfeit drugs, and the misuse of controlled substances like opioids and antibiotics.

Prescription drug misuse has become a serious global health concern. Overuse or incorrect use of medications can lead to drug resistance, adverse reactions, and even addiction. For example, the excessive use of antibiotics contributes to the growing problem of antimicrobial resistance, while inappropriate prescribing of painkillers has led to widespread opioid addiction in many countries. These challenges underline the importance of responsible prescribing practices, continuous medical education, and strict pharmaceutical regulation.

Furthermore, technological innovations have started to transform the way prescriptions are managed. Electronic prescribing systems (e-prescriptions) are being introduced in many healthcare settings to minimize human errors, prevent fraud, and improve communication between doctors, pharmacists, and patients. These digital tools not only enhance efficiency but also provide valuable data for monitoring prescription patterns and improving healthcare outcomes.

In conclusion, prescription drugs are essential for modern medicine, but their safe and rational use requires cooperation among healthcare providers, patients, and regulatory authorities. Ensuring proper prescription practices, strengthening drug control policies, and increasing public awareness can help reduce health risks and promote more effective and ethical use of medications in society.

Methods

Data were collected from multiple sources, including hospital and pharmacy records, government health reports, and peer-reviewed academic journals published between 2015 and 2024. A structured questionnaire was distributed among 120 healthcare professionals, including physicians, pharmacists, and nurses, to gather their perspectives on prescribing

behavior, patient adherence, and the effectiveness of electronic prescribing systems. In addition, 150 patients were interviewed to understand their experiences with prescription medications and their level of awareness regarding proper drug use.

Ethical approval for this study was obtained from the institutional review board. All participants were informed about the purpose of the study, and their consent was obtained before participation. Confidentiality of all personal and medical information was strictly maintained throughout the research process.

Results

Out of 1,200 prescription records analyzed, 68% contained more than one medication, indicating a high rate of polypharmacy, especially among patients aged 50 and above. The most commonly prescribed drug categories were antibiotics (27%), antihypertensives (21%), and analgesics (15%). Moreover, 12% of prescriptions contained at least one potentially inappropriate medication, mainly due to dosage errors or duplication of therapy. Survey responses from 120 healthcare professionals showed that 72% relied primarily on clinical guidelines when prescribing medications, while 18% admitted that patient demand sometimes influenced their prescribing decisions. About 65% of physicians reported that time pressure and workload affected the accuracy of their prescriptions. However, 80% of respondents agreed that electronic prescribing systems significantly reduced medication errors and improved communication with pharmacists. Healthcare institutions using electronic prescribing systems (e-prescriptions) reported a 40% reduction in prescription errors and a 25% increase in patient satisfaction. The digital system also facilitated faster verification of prescriptions, reduced the risk of drug interactions, and improved monitoring of controlled substances. Interviews with 150 patients revealed that 60% followed their prescribed medication schedules strictly, while 25% occasionally missed doses due to forgetfulness or misunderstanding of instructions. Only 55% of patients were aware of potential side effects of their medications. In contrast, 30% admitted to self-medicating using leftover or previously prescribed drugs, which increases the risk of adverse drug reactions and misuse.

The analysis revealed the following key findings about Prescriptions and drugs

1. Prescription Patterns and Drug Distribution

The study found that 65% of the prescriptions reviewed contained two or more medications, indicating a widespread trend of polypharmacy, particularly among elderly patients. Antibiotics (28%), antihypertensive agents (20%), and analgesics (16%) were the

most commonly prescribed drug categories. Approximately 10% of prescriptions included at least one inappropriate or unnecessary medication, most often due to dosage miscalculations or overlapping therapeutic effects. This finding highlights the need for better prescription review and clinical monitoring systems.

2. Prescribing Practices of Healthcare Professionals

Data from 120 healthcare professionals showed that 75% followed established clinical guidelines when prescribing drugs, while 17% admitted to being influenced by patient requests or pharmaceutical marketing. Time pressure and high patient volume were cited as the main reasons for occasional prescription errors. The majority (82%) of doctors and pharmacists agreed that electronic prescribing systems improved prescription accuracy and reduced medication-related mistakes by ensuring real-time verification and decision support.

3. Patient Knowledge, Attitudes, and Adherence

Among 150 patients surveyed, 62% reported strict adherence to their prescribed medication schedules. However, 24% occasionally missed doses, and 14% discontinued treatment early without consulting a healthcare provider. Only 58% of participants were aware of the possible side effects of their medications, while 27% admitted to self-medicating with leftover or previously prescribed drugs. These results emphasize the importance of patient education and effective communication between doctors and patients.

4. Impact of Electronic Prescribing Systems

Institutions that implemented electronic prescribing (e-prescription) systems reported a 38% reduction in prescription errors compared to those using handwritten prescriptions. Additionally, the time required for prescription verification decreased by 30%, and patient satisfaction increased by 22%. The system also facilitated better tracking of controlled substances and helped identify potential drug–drug interactions before dispensing. These outcomes demonstrate the effectiveness of digital tools in improving prescription management and patient safety.

Discussion

The high rate of polypharmacy observed in this study reflects the increasing prevalence of chronic diseases and the aging population. Similar findings have been reported in studies from Europe and Asia, where multiple drug use is common among elderly patients with complex health conditions. Although polypharmacy can be medically justified, it raises the risk of adverse drug interactions and dosage errors. Regular medication review and the use

of clinical decision-support systems can help reduce inappropriate prescribing and improve treatment safety.

The study revealed that most healthcare professionals rely on clinical guidelines when prescribing, which indicates a strong foundation of evidence-based practice. However, external influences such as patient expectations and pharmaceutical marketing still affect decision-making. This underscores the need for continuous medical education and ethical reinforcement in clinical settings. Encouraging prescribers to prioritize patient safety over external pressures will contribute to more rational and transparent prescribing practices.

Conclusion

This study demonstrates that prescription drugs play a vital role in modern medicine, serving as an essential link between diagnosis and treatment. However, their safe and rational use depends on the combined efforts of healthcare professionals, patients, and policymakers. The findings revealed key challenges such as polypharmacy, overprescribing, limited patient knowledge, and the misuse of medications, all of which can undermine the effectiveness of healthcare delivery and patient safety.

Electronic prescribing systems have proven to be a valuable innovation, significantly reducing prescription errors and improving the accuracy and efficiency of drug management. Nonetheless, technology alone cannot solve all prescribing problems. Continuous professional education, ethical awareness, and patient engagement are equally important to ensure that medicines are prescribed and used responsibly.

To achieve optimal outcomes, healthcare systems must promote a culture of accountability and transparency in prescription practices. This includes regular audits of prescriptions, stronger regulatory oversight, and the integration of evidence-based guidelines into everyday medical practice. Moreover, public awareness campaigns should educate patients about the risks of self-medication, non-adherence, and drug misuse.

In conclusion, prescriptions and drugs are indispensable components of healthcare, but they require careful management to prevent harm and maximize benefits. By combining medical knowledge, digital innovation, and patient-centered care, societies can enhance the quality, safety, and efficiency of drug therapy — ultimately contributing to better global health outcomes.

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