

Self-medication and Self-Diagnosis : A Double Edged Sword in Modern Healthcare

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Abstract

Self-medication and self-diagnosis are increasingly prevalent health behaviors in contemporary society, driven by easy access to over-the-counter (OTC) medications and the proliferation of digital health information. While these practices offer convenience and promote patient autonomy, they also present significant risks, including misdiagnosis, inappropriate drug use, and the escalation of antimicrobial resistance. This paper critically examines the causes, benefits, and dangers associated with self-treatment behaviors. Emphasis is placed on the urgent need for improved health literacy, stricter regulatory frameworks, and an enhanced role for pharmacists in guiding safe and informed medication practices. Additionally, survey data highlights the widespread nature of self-care habits, particularly among students and urban populations. The discussion underlines the necessity of integrating professional healthcare support with self-care practices to ensure that autonomy does not come at the cost of safety.

Keywords: Self-medication, Self-diagnosis, OTC drugs, Health literacy, Antimicrobial resistance, Pharmacist role

Introduction

Self-diagnosis refers to the process by which individuals identify medical conditions in themselves without professional consultation. With the growing reliance on online platforms such as Google, ChatGPT, and other artificial intelligence tools, many individuals attempt to assess their symptoms and determine treatment pathways independently. While these technologies provide readily available health information, they often lack the nuance and clinical context needed for accurate medical evaluation. Self-medication, as defined by the World Health Organization (WHO), involves the use of medicinal products by individuals to treat self-recognized symptoms or disorders without consulting a healthcare professional. This includes the continued use of medications previously prescribed by a physician for chronic illnesses or new health issues. Examples include the use of antidepressants, mood stabilizers, pain relievers, and herbal remedies without professional supervision.

Although minor ailments such as headaches or the common cold may be managed with self-care practices, the increasing trend toward self-medication for more complex conditions poses serious health threats. These include adverse drug reactions, delayed medical intervention, incorrect dosages, and increasing antimicrobial resistance. Globally, this trend is particularly concerning in low- and middle-income countries where prescription drugs are easily accessible without medical authorization. This paper aims to explore the phenomenon of self-diagnosis and self-medication in depth, examining its causes, potential benefits, and associated risks. The discussion also emphasizes the role of healthcare professionals, particularly pharmacists, in ensuring safe and responsible health management practices.

Background of the study

The concept of self-care, including self-medication and self-diagnosis, is not a novel phenomenon. Historically, before the advent of modern medicine, individuals relied on traditional remedies, herbal treatments, and home-based solutions to manage health concerns. However, the landscape of self-treatment has evolved significantly with the commercialization of pharmaceuticals and the widespread availability of internet-based health information.

In the digital era, individuals can access vast amounts of medical content within seconds by simply entering their symptoms into search engines or health apps. While this may promote personal responsibility and health management engagement, it also poses significant risks. Many people lack the medical expertise required to distinguish between serious and benign conditions, leading to potentially dangerous self-treatment decisions.

Moreover, the influence of pharmaceutical marketing, health influencers on social media, and peer discussions on online forums has fostered a culture in which people feel increasingly confident in making health decisions without professional input. While this autonomy may foster a sense of control, it also contributes to misinformation, overconfidence, and unsafe health practices. It is crucial to distinguish between traditional self-care, which often involves safe home remedies for minor conditions, and the modern trend of technology- self-diagnosis and self-medication, which often lacks proper oversight. This shift underscores the need for evidence-based research, regulatory attention, and public education.

Risk and consequences assessment

| Risk | Description |
|--------------------------|--|
| Misdiagnosis | Inaccurate assessment of symptom leading to incorrect treatment |
| Adverse drug interaction | Dangerous side effect due to lack of professional guidance |
| Dosage error | Under or over dosing due to lack of knowledge about appropriate usage |
| Delayed treatment | Prolonged illness or complication due to failure to consult healthcare experts |

it is critical that public health initiatives focus on improving health literacy and limiting the availability of medications without prescription. Healthcare professionals must also be empowered to monitor and intervene where unsafe practices are observed.

Why do individual self medicate ?

Self-medication has become increasingly common, particularly among educated and urban populations

Desire for Autonomy: Many individuals prefer to take control of their health and believe they are capable of managing minor conditions on their own.

Convenience and Time-Saving: Visiting a healthcare facility often involves waiting, travel, and financial costs, which some individuals prefer to avoid.

Limited Access to Health Care: In rural or underserved areas, access to qualified medical professionals may be limited or delayed, prompting self-treatment.

Financial Constraints: The high cost of consultations, diagnostics, and medications in formal healthcare settings leads many to seek cheaper alternatives.

Privacy and Stigma: Patients experiencing sensitive conditions (e.g., mental health, sexual health) may avoid professional help due to fear of judgment or embarrassment.

Advertising and Peer Influence: Direct-to-consumer marketing, social media influencers, and anecdotal advice from peers often encourage self-treatment behaviors. **Perceived Familiarity with Illness:** Prior experience with similar symptoms leads some individuals to believe professional input is unnecessary.

Common categories of drugs used in self-medication include oral contraceptives, topical corticosteroids, antihistamines, and antifungal agents. While these may be considered relatively safe under proper supervision, their unsupervised use can lead to complications such as skin thinning, hormonal imbalances, allergic reactions, or delayed treatment.

List of drug used for self medication :

| Drug name | Drug class | Route of administration | Potential risk |
|---------------------------|-------------------------|-------------------------|----------------------------------|
| Paracetamol / calpol | Antipyretic / analgesic | Oral | Hepatotoxicity at high dose |
| Chlorpheniramine / d cold | Antihistamine | Oral | Drowsiness , dry mouth |
| Ciprofloxacin / ciplox | Antibiotic | Oral | Antibiotic resistances ,GI upset |
| Chloroxylenol / Dettol | Antiseptic | Topical | Skin irritation if overused |

is crucial to note that even seemingly benign medications such as paracetamol can have toxic effects when overdosed, while inappropriate antibiotic use is a key driver of antimicrobial resistance. Therefore, patient education and regulated drug dispensing are essential components in mitigating these risks.

Need for the study

The increasing prevalence of self-medication and self-diagnosis presents both opportunities and challenges for modern healthcare systems. While self-care has the potential to reduce the burden on healthcare facilities and empower individuals, it also raises concerns regarding inappropriate medication use, misdiagnosis, and lack of accountability.

Despite growing public interest in self-care, significant gaps remain in understanding the long-term health, economic, and societal implications of these practices. The abundance of over-the-counter (OTC) medications and unverified online health content has made self-treatment more accessible than ever. However, this accessibility often comes at the expense of safety and clinical accuracy.

The need for this study is therefore grounded in several critical issues:

Rising prevalence: The global trend toward self-diagnosis and self-medication demands a deeper examination of its impact.

Fragmented evidence: Existing literature lacks an interdisciplinary and systematic analysis of self-care practices and their consequences.

Public health concerns: Unregulated medication use contributes to antibiotic resistance, drug toxicity, and increased health risks.

Digital misinformation: The role of unverified online sources in shaping public health behavior requires urgent evaluation.

Policy and practice gaps: There is a need for stronger regulatory frameworks and public education to promote informed decision-making.

By addressing these gaps, this study aims to inform healthcare policy, improve health literacy, and enhance the role of healthcare professionals—particularly pharmacists—in supporting responsible self-care.

Objective:

The primary objective of this review is to comprehensively examine the growing trend of self-medication and self-diagnosis, with particular attention to their prevalence, underlying causes, associated risks, and potential solutions.

- 1. Assess the prevalence and demographic distribution of self-medication and self-diagnosis.
- 2. Identify key contributing factors including digital access, healthcare barriers, and economic considerations.
- 3. Analyze the health risks such as misdiagnosis, antimicrobial resistance, and inappropriate drug use.
- 4. Recommend actionable solutions including pharmacist involvement, regulatory enforcement, and health education.

Causes of Self-Medication and Self-Diagnosis

Several factors contribute to the rising prevalence of self-medication and self-diagnosis:

- Ease of access to information: Online platforms, including search engines and health websites, provide instant access to medical content, encouraging individuals to draw conclusions without professional input.
- Availability of OTC drugs: Many countries allow a wide range of medications to be sold without prescriptions, making it easy for people to treat symptoms on their own.
- Healthcare costs and accessibility: In regions where medical services are expensive or difficult to access, people often turn to self-care as a more affordable and convenient alternative.
- Time constraints and busy lifestyles: Some individuals avoid visiting clinics due to time limitations, opting instead for quick remedies and self-diagnosis.
- Stigma and privacy concerns: People with certain health conditions may avoid medical consultation out of embarrassment or a desire to keep their condition private.

Advantage of self medication

- Empowerment and autonomy : patient can feel more in control of their health and learn to manage minor ailment effectively
- Reduced burdern on healthcare system: for minor condition , self care may reduce unnecessary visti to healthcare facilities
- Immediate relief for common illnesses : condition like headache , cold , or minor , pain, can often be treated cold or minor pain can often be treated safely with OTC medication.

Discussion

Recent research and surveys have provided insight into the rising rates of self-diagnosis and self-medication among a variety of demographics. Over 50% of patients fail to take their drugs as recommended, and over 50% of medications are sold, administered, or prescribed incorrectly globally, according to data from the World Health Organization (WHO). A study conducted in developing countries showed that up to 80% of individuals practiced self-medication for conditions such as fever, headache, and gastrointestinal issues. In urban settings, especially among educated populations, the use of the internet for health-related queries has become widespread, with many relying on online symptom checkers and forums for diagnosis.

Our findings show that self-medication is prevalent among youth and urban populations, aligning with Rathod et al. (2023), who reported a high self-medication rate in central India. Similar results were noted by Pareek (2022), indicating widespread practices even among healthcare students. The use of online tools like ChatGPT for symptom checking mirrors the study by Loda et al. (2020), which revealed that digital health-seeking behavior often lacked critical evaluation. This poses risks of misdiagnosis and delayed treatment, as echoed by McMullan et al. (2019) in their review on cyberchondria.

The results clearly demonstrate that self-medication and self-diagnosis are not only prevalent but are also becoming normalized in many communities. While the reasons behind these behaviors are multifaceted, common patterns emerge: limited access to healthcare, the convenience of OTC drugs, and the availability of online health information all play significant roles.

The high rate of antibiotic use without prescription is particularly concerning. Not only does this contribute to the global challenge of antimicrobial resistance, but it also reflects a lack of understanding among the public about the long-term consequences of such practices. This is further exacerbated by the misconception that antibiotics are effective against viral infections, which they are not.

Additionally, the use of digital tools for diagnosis presents both opportunities and challenges. On the one hand, these platforms can promote awareness and encourage patients to seek care. On the other hand, the low accuracy of such tools, especially when used in isolation, can lead to misdiagnosis and delayed treatment. This highlights the importance of combining technology with professional healthcare support, rather than using it as a substitute.

Role of pharmacist in self-medication

Patient Education: Pharmacists provide counseling on the proper use of over-the-counter (OTC) medications, educate about possible side effects, and inform patients about symptoms that require immediate medical consultation.

Early Intervention: Through regular interaction with patients, pharmacists can recognize signs of drug misuse, inappropriate self-medication, or incorrect self-diagnosis, and can recommend timely referrals to healthcare providers.

Public Health Advocates: As some of the most accessible healthcare professionals in many communities, pharmacists play an important role in promoting public health, offering preventive advice, and participating in health campaigns.

Guardians Against Antibiotic Misuse :Pharmacists contribute significantly to antibiotic stewardship programs by ensuring antibiotics are dispensed appropriately, thus helping to combat antibiotic resistance.

Preventive Measures and Solutions

To mitigate the dangers of self-medication and self-diagnosis, several steps can be taken at both the individual and systemic levels:

Health Education: Increasing public awareness about safe self-care, the limitations of online information, and the importance of professional consultation is essential.

Regulatory Policies: Governments should enforce stricter control over the sale of OTC and prescription medications to prevent misuse.

Accessible Healthcare Services: Improving access to affordable and timely medical care, including through telemedicine and community clinics, can reduce reliance on self-treatment.

Digital Health Literacy: People should be taught how to critically evaluate online health content and recognize the importance of verified medical sources.

Conclusion

The growing prevalence of self-medication and self-diagnosis presents a significant challenge to modern healthcare systems. While these practices offer certain advantages—such as convenience, cost savings, and a sense of autonomy—they also carry considerable risks, including misdiagnosis, adverse drug reactions, incorrect dosing, and the escalation of antimicrobial resistance. The increasing accessibility of over-the-counter medications and online health information has empowered individuals to manage minor ailments independently. However, the lack of professional oversight often leads to inappropriate treatment and delayed medical intervention.

This review underscores the need for a balanced approach that integrates responsible self-care with guidance from qualified healthcare professionals. Digital health tools and symptom-checker platforms can play a supportive role but must not replace clinical expertise. Moreover, the misuse of antibiotics without prescription remains a particularly urgent concern, contributing to a global public health threat. Pharmacists, due to their accessibility and expertise, must play a proactive role in educating the public, ensuring rational drug use, and advocating for antibiotic stewardship. Simultaneously, healthcare policymakers must implement regulations that restrict the unregulated sale of medications and invest in health literacy campaigns to promote informed decision-making. Ultimately, fostering a culture of safe self-care depends on collaborative efforts between healthcare providers, educators, regulators, and the public. By bridging the gap between autonomy and professional oversight, we can reduce health risks while supporting individuals in making safe, informed choices about their health.

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