



Impact of self medication on efficacy of commonly use medicines

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Abstract

Self-medication is defined as taking medications without the physician's prescription. It is a worldwide public health problem, especially in countries with limited resources. Although self-medication can reduce waiting time and save money, it may carry some potential risks, e.g., antibiotic resistance or inappropriate management with subsequent complication. A limited number of self-medication studies have been conducted in Egypt. Self-medication is a common behavior that could help human infections become resistant to antibiotics. The community should always be made aware of the detrimental impacts of such activities as well as the efforts being made to stop them. Widespread irrational antibiotic use without medical oversight increases the risk of pathogen resistance, missed diagnosis, put off proper treatment, and increased morbidity. The main subjects of this review were allopathic self-medication use, safety, and justification. It would be safe if the users were well informed about the dosage, timing, side effects, and implications of an overdose. Lack of understanding, however, can result in serious side effects such antibiotic resistance, skin issues, hypersensitivity, and allergies.

Keywords: Allopathic drugs, antibiotic resistance, self-medication.

Introduction

Self-medication is prescribed daily for taking care of our health [1]. Self-care and self-medication were viewed as useless and possibly even harmful practices in the West around the 1960s. Even today, many

nations' health systems continue to be characterized by a paternalistic view of medicine that priorities curing illness over preventing disease [2].

Self-medication has traditionally been defined as “the taking of drugs, herbs or home remedies on one’s own initiative, or on the advice of another person, without consulting a doctor [3].

Common sources of self-medication include families, friends, neighbors, the chemist, previously prescribed medications, and advice from advertisements in newspapers or popular periodicals. Self-medication today should be understood as the “desire and ability of people/patients to play an intelligent, independent and informed role, not just in terms of decision-making but also in the management of those preventive, diagnostic and therapeutic activities which concern them”[3,5].

Some governments are promoting self-care, including self-medication, for minor diseases more and more. The expense of treatment, travel time, and doctor’s time, or consultation time, are all reduced with appropriate self-medication [1,6].

Self-medication has a number of major drawbacks, including resource waste, increased pathogen resistance, and serious health risks such unpleasant reactions and protracted suffering. Antibiotic resistance is a serious issue, particularly in underdeveloped nations where antibiotics are sold over-the-counter [1,7]. Therefore, the government should implement the required measures to control ethical self-medication. This can be achieved by having safe medications available, together with clear usage instructions and, if necessary, medical advice [1,8]

In India, it is very common to see self-medication practice and which is emerging challenge to health care providers. Although self-medication can reduce the load on medical services and save cost, it is far from being a completely safe practice [8,9]. Potential risks may include incorrect self-diagnosis, delays in seeking medical advice when needed, severe adverse reactions, dangerous drug interactions especially for older people with multi-morbidity, incorrect manner of administration, incorrect dosage, incorrect choice of therapy, masking of a severe disease, and development of microbial resistance.

Antibiotics resistance, one of the biggest threats to global health, may result from self-medication of antibiotics . The acceleration of antibiotic resistance and the decline in the development of new antibiotics to combat the problem have created significant public health challenges to health policymakers, health care workers, and the population around the world [9]. In many developing countries including Egypt, antibiotics are unregulated and available over the counter without a prescription.

Trend of “Rx-to-Over-the-Counter Switch”

The transfer of prescription (“Rx”) medicines to non-prescription or OTC status is known as the “Rx-to-OTC switch”. Many new medicines are first introduced as prescription medicines. After a sufficient time has passed in the use of the medicine by many patients and large-scale experience and scientific information has been gathered, for suitable conditions a manufacturer may elect to submit an application to the appropriate authority for the medicine to be given OTC status [9].

Why do People Use Self-medication?

Modern consumers (patients) wish to take a greater role in the maintenance of their own health and are often competent to manage (uncomplicated) chronic and recurrent illnesses (not merely short-term symptoms) after proper medical diagnosis and with only occasional professional advice, e.g. use of histamine H₂-receptor blocker, topical corticosteroid, antifungal and oral contraceptive [10]. They are understandably unwilling to submit to the inconvenience of visiting a doctor for what they rightly feel they can manage for themselves, given adequate information [9].

Self-medication is very common and a number of reasons could be enumerated for it [10]. Reason of self-care, feeling of sympathy toward family members in sickness, lack of time, lack of health services, financial constraint, ignorance, misbeliefs, extensive advertisement and availability of drugs in other than drug shops are responsible for growing trend of self-medication [11].

History of Self-care and Self-medication (1970-2010)

1970-The World Federation of Proprietary Medicine Manufacturers Association renamed as WSMI with an objective to stress for world-wide regulatory classification of medicinal products into two classes: Prescription and non-prescription [12].

1975-First international symposium on the role of the individual in primary care was held at the European Regional Offices of the WHO-stress on “self-care” [13].

1977-World Health Assembly adopted the resolution calling for “health for all” by the year 2000 and in 1978, the Declaration of Alma-Ata.

1981-World Medical Association stressed the responsibility of people for their own health in a “Declaration on the Rights of the Patient.”

1986-Ottawa (Canada) and launched “the Ottawa Charter for Health Promotion”, in which self-care was identified as one of the three key mechanisms for health promotion [14].

A new era of access to modern, effective medicines was heralded in the early 1980s, when medicines which had previously only been available on prescription began to be switched to non-prescription status. Among the first products switched to non-prescription status was ibuprofen for the treatment of pain, in the UK (1983) and the US (1984) [13,14] . In Canada, hydrocortisone became available without a prescription in 1986. A statement of WSMI Policy on Consumer Information and the Role of Labeling was formally approved and released by the WSMI Board of Directors at the Fifth General Assembly in October 1979 in Australia. The policy emphasizes that the role of labeling is “to provide all information necessary to enable an individual without medical training to use the medicine appropriately.”

The 1990's-Guiding Principles in Self-Medication

1990's, there was an increasing recognition in many parts of the world that people were managing or treating a large proportion of their ailments without always consulting a health professional [15].

1998, Role of pharmacist in self-medication was explained by WSMI and the International Pharmaceutical Federation (FIP).

1993-WSMI's 11th General Assembly in Acapulco, Mexico, where the theme is “Globalization of the self-medication market: challenges and opportunities [16].

1997-WSMI publishes its first global review of consumer surveys: “Health care, self-care and self-medication.

1999-A joint statement is produced by WSMI and FIP entitled “responsible self-medication”.

WSMI's 13th General Assembly in Berlin, Germany, where the theme is “self-care, a vital element of health policy in the information age [17].

2000-2005-The Benefits of Responsible Self-Medication

2000-The WHO publishes “guidelines for the regulatory assessment of medicinal products for use in self-medication.”

2006-2010 and the future-A globalizing world. Prevention of disease through self-care and responsible self-medication [18].

Sources

The common sources of self-medication are previous prescription, friends, advertisements, chemist shop and books [19].

Sources of information for self medicationA part from previous doctor’s prescription and chemists, in urban areas, advertisement is another source of information for self medications. Similar findings were observed in previous studies. Previous doctor’s prescription and chemists are major sources of information for self medication use in rural areas . Doctors are not available in time in rural areas, this might have tempted the rural population to use initial doctor’s prescription for self-medication [19].

Sources of medicines

From the studies that stated the sources of medicines for self-medication, it was noted that the sources were varied. These includes: the pharmacies, home medicine cabinet, supermarket, retail outlets, as well as from friends, family, neighbors, and even classmates [21,23]. One author stated that those students even obtained their medicines from traditional healers and homoeopaths [24].

Sources of drug information

In this review, only two authors have reported the sources of drug information in self-medication practice [24, 26]. These authors reported that the students get access to drug information from various sources. These includes from their own past experiences, family, friends or university course mates, pharmacy sales representative, doctor or nurse, and advertisement in the, radio, newspaper, magazine or books.

Factors influencing in self medication

Self-medication is influenced by many factors such as education, family, society, law, availability of drugs and exposure to advertisements [1,22,23]. Table 1 shows list of drugs used for self-medication [23,24,26].

Table 1

List of drugs used for self-medication

Category	Drugs
Cough and cold	D-cold total, corex, benadryl, glycodin
Analgesics	Saridon, disprin, diclofenac, nimesulide, paracetamol, ibuprofen
Antipyretics	Calpol, crocin
Antiseptic	Dettol, boroplus
Antibiotics	Ciprofloxacin, norfloxacin, amoxicillin, cefadroxil
Others	Dabur chyawanprash

Potential benefits

At individual level:

An active role in his or her own health care:-

Providing patients with preventive medication; preventing diseases from spreading; Educating people about prevention, cures and other such tips; disseminates information about how to live healthy lives. Patient participation means involvement of the patient in decision making or expressing opinions about different treatment methods, which includes sharing information, feelings and signs and accepting health team instructions [27].

Self-reliance in preventing or relieving minor symptoms or conditions:-

Attending behavioral programs to understand stress management techniques and gain confidence.

Understanding ways to manage the symptoms or stress factors and use appropriate treatment options [28].
Improving the understanding of label and leaflet accompanying the medication.

Education opportunities on specific health issues (i.e. stop smoking aids and products to treat heartburn):-

Health education is a profession of educating people about health. Areas within this profession encompass environmental health, physical health, social health, emotional health, intellectual health, and spiritual health, as well as sexual and reproductive health education [28].

At community level :

Good self-medication can also provide benefits such as:

Saving scarce medical resources from being wasted on minor conditions:

Social orders are confronting clinical asset shortcomings, bury alia because of expanded future and restricted wellbeing spending plans and furthermore because of worldly or ceaseless actual deficiencies of assets like contributor organs [29]. This makes it trying to meet the clinical necessities of all. Ethicists give regularizing direction to how to decently dispense scant clinical assets; yet authentic choices require also data with respect to what the overall population views as fair. Lowering the expenses of local area supported medical services programs [30].

Reducing absenteeism from work due to minor symptoms:- Non-attendance is the term given when a representative is routinely and habitually missing from work. This bars paid leave and events where a business has allowed a worker downtime. On the off chance that you're a director, manager, or group pioneer, you'll have likely experienced instances of non-attendance[30]. You ought to realize that staff will be missing now and again, for example, for disease, jury obligation, or mourning. Notwithstanding, when non-attendance is successive and unreasonable it starts to turn into an issue.

Reduce the pressure on medical services where health care personnel are insufficient:-

A better understanding of factors influencing quality of medical service can pinpoint better strategies for quality assurance in medical services. This study aimed to identify factors affecting the quality of medical services provided by Iranian physicians[31].

Increase the availability of health care to populations living in rural or remote areas :-

Transform the provision of care with tailored solutions that prioritize acceptability, availability and affordability to enable you to serve the underserved(32).

In a world of scarce government and in many countries scarce individual resources, responsible self-medication should be a cornerstone of healthcare provision and health policy[32].

Potential risks

Individual level

Incorrect self-diagnosis :-Individuals self-diagnosis psychological syndromes, they can miss a medical disease that contributes to their symptoms. With self diagnosis you also run the risk of being completely wrong about an illness you have, especially if the symptoms you are experiencing [33].

Failure to recognize special pharmacological risks:-

Failure of drug treatment may be due to wrong diagnosis, selection of an inappropriate drug or dosage, use of an adulterated or fake drug, the patient's non-adherence, a drug's poor bioavailability or lack of efficacy, medication error, or occurrence of an adverse reaction.

Rare but severe adverse effects:-

Dose-related (Augmented), non-dose-related (Bizarre), dose-related and time-related (Chronic), time-related (Delayed), withdrawal (End of use), and failure of therapy (Failure) [34,35].

Failure to recognize or self-diagnosis contraindications, interactions, warnings and precautions:-

- Incorrect self-diagnosis.
- Delays in seeking appropriate medical advice and proper treatment.
- Potential adverse reactions.

- Worsening of the condition the individual is trying to self-treat.
- Dangerous drug interaction.
- Masking of severe diseases.
- Risk of dependence and abuse.

Failure to recognize that the same active substance is already being taken under a different name:-

Awareness- Lack of awareness about PV program among the population, pharmacist and other health care professional is the factor that play role in obstructing PV program in developing countries. It is also the main problem in reporting ADR which is the main step for detection of ADR [35].

Failure to report current self-medication to the prescribing physician (double medication/harmful interaction):-

Inappropriate polypharmacy — the use of excessive or unnecessary medications — increases the risk of adverse drug effects, including falls and cognitive impairment, harmful drug interactions, and drug-disease interactions, in which a medication prescribed to treat one condition worsens another or causes a new one (36).

Failure to recognize or report adverse drug:-

Adverse drug reactions which lead to patients' hospitalization or prolonged hospitalization are a serious cause of clinical costs. ADRs have negative consequences not only in reference to patients' health, but they also generate costs for the entire healthcare system (36).

Incorrect route of administration:-

These errors occur when a pharmacist dispenses a medication that has been manufactured for administration via a different route. For example, the pharmacist dispensed ear drops instead of eye drops, or the patient was prescribed injections, but was given tablets(36).

Excessively prolonged use:-

Antibiotic overuse due to prolonged antibiotic duration has not draw enough attention in developing countries with high antibiotic consumption. We aimed to describe the current status of prolonged early antibiotic duration in very-low-birth-weight (VLBW) infants in a large regional multicenter cohort in China (37).

Risk of dependence and abuse:-

Heredity is a major risk factor for addiction. According to the National Institute on Drug Abuse , up to half of your risk of addiction to alcohol, nicotine, or other drugs is based on genetics. If you have family members who've experienced addiction, you're more likely to experience it too.multicenterrug interaction.

Storage in incorrect conditions or beyond the recommended shelf life:-Improper food storage can lead to several problems, including bacteria and mold growth, food spoilage through natural decay, and even food waste, which costs billions of dollars annually worldwide. Below are some of the areas that are affected by improper storing of food (37).

Prevention of Potential Risks Associated with Self-medication

Role of health profession

Health professionals are one who has potential role in preventing risks of self-medication. Because he is the one who work on three main therapeutic aspects of professionalism in his daily practice: Information, therapeutic advice and education [38].

Information

Whenever health professionals are prescribing drugs, he should give proper instructions and explain for what it is prescribed so that it will be helpful for the patient to understand and making his own decisions. Given information should be at patient's comprehension level so that it will be helpful for them to understand its management [38].

Therapeutic advice

Lack of therapeutic compliance is a serious problem in both acute and chronic treatments and reflects a poorly-understood or incomplete description of the treatment aims. If patients are not well-informed they are unlikely to use medication correctly (39).However, if the directions for use and the limitations of a given drug are explained-for example, dose, frequency of dose, treatment course, how to take it, etc., then patients have a set of guidelines which will help them to use the drug correctly, both now and in the future. Inappropriate and erratic self-medication, along with lack of compliance, will only be reduced if patients are informed and understand clearly why certain advice has been given [39] .

Education

Inappropriate self-medication is the result of the medical model from which people have learnt. Proper health education should be given to the patients. By regularly adopting an educational attitude we can have an effect on large sectors of the population, on people who, in turn, may directly influence their friends and family. This aspect is of particular importance with respect to the self-medication of children by their parents or takes cares[40].

Role of pharmacist

He is one of the key role players in educating his customers about the proper use of medicines, which are intended for self-medication. For that necessary steps have to be taken in his training and practice [41,43].

Pharmacists play a valuable role in identifying, solving and preventing drug-related problems for the purpose of achieving optimal patient outcomes and quality of life. Ambulatory based pharmacists have the opportunity and responsibility to foster safe, appropriate, effective and economical use of all medications, especially those therapies patients are self-selecting. Pharmacists should guide their customers to consult the physician before taking any medication by self [42]. Unlike above role, pharmacists have following function as a:

Communicator

The pharmacist should initiate dialogue with the patient (and the patient's physician, when necessary) to obtain a sufficiently detailed medication history. In order to address the condition of the patient appropriately the pharmacist must ask the patient key questions and pass on relevant information to him or her (e.g. how to take the medicines and how to deal with safety issues)(43).

The pharmacist must be prepared and adequately equipped to perform a proper screening for specific conditions and diseases, without interfering with the prescriber's authority. The pharmacist must provide objective information about medicines;

The pharmacist must be able to use and interpret additional sources of information to satisfy the needs of the patient (44).The pharmacist should be able to help the patient undertake appropriate and responsible self-medication or, when necessary, refer the patient for medical advice. The pharmacist must ensure confidentiality concerning details of the patient's condition.

Quality drug supplier

The pharmacist must ensure that the products he/she purchases are from reputable sources and of good quality [44]. The pharmacist must ensure that the products he/she purchases are from reputable sources and of good quality. The pharmacist must ensure the proper storage of these (44).

Trainer and supervisor

To achieve this pharmacist must develop a protocol for referral to the pharmacist, protocols for community health workers involved with the handling and distribution of medicines [40,43]. To ensure up-to-date quality service, the pharmacist must be encouraged to participate in continuing professional development activities such as continuing education. The pharmacist is often assisted by non-pharmacist staff and must ensure that the services rendered by these auxiliaries correspond to established standards of practice (44,45).

To achieve this, the pharmacist must develop:

Protocols for referral to the pharmacist. Protocols for community health workers involved with the handling and distribution of medicines. The pharmacist must also promote the training and supervise the work of non-pharmacist staff (44).

Collaborator

It is imperative that pharmacists develop quality collaborative relationships with Other health care professionals National professional associations The pharmaceutical industry Governments (local/national) Patients and the general public .In so doing, opportunities to tap into resources and expertise, and to share data and experiences, in order to improve self-care and self-medication, will be enhanced (45).

Health promoter

As a member of the health-care team, the pharmacist must participate in health screening to identify health problems and those at risk in the community, participate in health promotion campaigns to raise awareness of health issues and disease prevention, provide advice to individuals to help them make informed health choices [43] .

Promotion of Responsible Self-Medication

The OTC Committee of the Organization of Pharmaceutical Producers of India is working toward the promotion of responsible self-medication with a view to grow the OTC sector. It is aiming to get regulatory support for issues such as the accessibility of household TC remedies and increasing the awareness of the importance of responsible self-medication with the general public and the government [46].

Many healthcare organizations have made important statements on self-care and self-medication, singly or jointly with WSMI. Some selected illustrations only are given here [46].

The WHO: “It has become widely accepted that self-medication has an important place in the health care system. Recognition of the responsibility of individuals for their own health and awareness that professional care for minor ailments is often unnecessary has contributed to this view. Improvements in people's general knowledge, level of education and socio-economic status in many countries form a reasonable basis for successful self-medication (46).

The FIP: “To have good health, people are becoming more responsible, getting proper information as much as possible to decide in their own care. Pharmacists and the manufacturers of non-prescription medicines share the common goals of providing high quality service to the public and encouraging the responsible use of medicines[47].The international council of nurses (ICN): “Self-medication is a key component of self-care that is particularly significant in an era of increasing chronic illness and well-informed health care consumers. Optimizing responsible self-medication is an important and underused resource for health and provides an opportunity for collaboration and consultation among consumers, nurses, pharmacists and physicians (47).

Conclusion

Self-medication is an alarming concept. This review focused on the self-medication of allopathic drugs, their use, its safety and reason for using it. It would be safe, if the people who are using it, have sufficient knowledge about its dose, time of intake, side-effect on over dose, but due to lack of information it can cause serious effects such as antibiotic resistance, skin problem, hypersensitivity and allergy. Hence, developing country like India where we have poor economic status, education status as well as poor health care facilities. People have less knowledge regarding risks associated with their self-medication. We are on the edge of sword whether to promote self-medication or not. Hence it is recommended that holistic approach should be taken to prevent this problem, which includes proper awareness and education regarding the self-medication and strictness regarding pharmaceutical advertising. Dispensing modes in the needs to

be improved through proper education, strict regulatory and managerial strategies to make health care easily accessible and cost-effective. Health professionals have to spend some extra time in educating patients regarding the same. Improved knowledge and understanding about self-medication may result in rationale use and thus limit emerging microbial resistance issues.

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