

# Prevalence and Measure of Self Medication: A Review

Bushra Ali Sherazi<sup>1</sup>, Khawaja Tahir Mahmood<sup>2</sup>, Fatima Amin<sup>1</sup>, Mariam Zaka<sup>1</sup>, Munaza Riaz<sup>1</sup>, Ayesha Javed<sup>1</sup>

<sup>1</sup>Department of Pharmacy, Lahore College for Women University, Lahore, Pakistan

<sup>2</sup>DTL, Lahore, Pakistan.

---

## Abstract:

Self-medication is the use of medicines by the people on their own inventiveness or on the suggestion of a friend, family member or lay persons without consulting a qualified health care professional. People use medicines for prevention, cure, diagnosis and management of diseases and sometimes this use may be unnecessary (drugs misused and abused for pleasure, addiction and sex purposes). Self-medication is an element of self care and is recognized by WHO in certain conditions, which seems useful in reducing the burdens of already overloaded health care systems especially in developing countries like Pakistan. There is a great communal and professional concern about the irrational use of drugs. Unbridled self medication may result in unforeseen clinical eventualities. In Pakistan, easy access to a wide range of drugs without prescription at various sale points coupled with inadequate health care services and socioeconomic factors result in increased proportions of drugs used as self-medication compared to prescribed drugs. This issue needs to be focused on by the responsible authorities. This review article focuses on the prevalence, measures, benefits, hazards and various factors leading to self medication.

**Keywords:** self medication, prevalence, measure.

---

## INTRODUCTION

Self-medication is defined by many authors as the use of medicines by a patient on his own initiative or on the recommendation of a non professional or a lay person instead of seeking advice from a health care provider. [1, 2]

This includes acquiring medicines without an authorized prescription, resubmitting old prescriptions to purchase medicines, sharing medicines with relatives or members of one's social circle or using leftover medicines stored at home. [3] Self-medication may also be defined as the use of nonprescription medicines (over the counter drugs) by people on their own initiative. Self-care, including self-medication, has been a feature of healthcare for many years. Nowadays people are keen to accept more personal responsibility for their health status and to obtain as much sound information as possible from expert sources in order to help them make appropriate decisions in health care. Governments and health insurers are increasingly encouraging self-care, including self-medication when appropriate. [4]

## PREVALENCE OF SELF MEDICATION

Globally, self-medication has been reported as being on the rise. In developing countries people are not only using non-prescription drugs but also prescription drugs, as self-medication products, without supervision. The World Health Organization has emphasized that self-medication must be correctly taught and controlled. [5, 6] Responsible self-medication, which is limited to over the counter (OTC) drugs, may generate considerable net benefit flows to economies through saving in travel and

session time and the direct financial cost of treatment. [7]

Self-medication can help treat minor ailments that do not require medical consultation and hence reduce the pressure on medical services particularly in the deprived countries with inadequate health care resources. [8] In a number of developing countries many drugs are dispensed over the counter without medical direction. In this case, self-medication provides a lower cost-alternative for people who cannot afford the fee of medical services. [9] However, increased access to non-prescription medicines may encourage patients to believe that there is a drug treatment for every ailment. [10]

## MISUSE /ABUSE OF OTC PRODUCTS

There is also the potential for misuse and abuse of such drug products. The terms 'misuse' and 'abuse' are often used interchangeably, but they have precise meanings in this context. Misuse is defined as using an OTC product for a legitimate medical reason but in higher doses or for a longer period than recommended, e.g. taking more of a painkiller than recommended to treat headache. Abuse is the non-medical use of OTC drugs, e.g. to experience a 'high' or lose weight. [11] There has been relatively little systematic research on the topic, partly due to the perception that misuse/abuse of OTC drugs is not as problematic as other forms of drug abuse.[12]

## FACTORS LEADING TO SELF MEDICATION

Studies showed that the increase in self-medication was due to a number of factors like socioeconomic factors, lifestyle, ready access to drugs, the increased potential to manage certain illnesses through self-

care, and greater availability of medicinal products. Patient contentment with the healthcare provider, long waiting times, cost of the drugs, educational level, age and gender are the other important factors influencing self-medication. One of the most common reasons for indulging in self-medication includes high cost of private doctor's consultations. The condition could be more worst in rural or distant corners, where the people are deprived socially, economically and educationally with inadequate health facilities. In another study prior familiarity and the non-seriousness of the illness were the top two reported factors for self-medication and reading materials were the top reported source of information. The patient's assessment of his ailment as been minor was also identified as one of the major factors for self medication in a study conducted in Nigeria. [5, 13, 14, 15, 16, 17]

Although, OTC (over the counter) drugs are intended for self-medication and are of established efficacy and safety, their inappropriate use due to lack of knowledge of their side effects and interactions could have serious insinuation, especially in special population groups like children, elderly, pregnant and lactating mothers. [18]

#### **NEGATIVE OUTCOMES OF SELF MEDICATION**

The cost of negative outcomes as a consequence of self medication may include wastage of resources, increased resistance of Pathogens, and generally entails serious health hazards such as adverse reactions, drug interactions and prolonged suffering. patients taking nonsteroidal antiinflammatory drugs or antiplatelet drugs frequently experience gastrointestinal toxicity. The availability of the more complex drugs such as antibiotics without prescriptions is a source of great concern. Antimicrobial resistance is a current problem worldwide particularly in developing countries where antibiotics are often available without a prescription. [19, 20, 21, 22, 23, 24, 25]

Use of NSAIDs and aspirin, for example, are associated with an increased risk of adverse drug events, hospitalization and death, with the elderly being particularly vulnerable. [26] Some OTC medicines may also have severe interactions with prescribed medicines. [27] for example omeprazole and folic acid. Other hazards of self-medication may also include drug dependence and addiction [28] for example addiction of cough syrups, problems due to misdiagnosis [29] for example sinusitis is often misdiagnosed as allergy, over and under dosing [30] over dose hepatic toxicity with paracetamol and

tragedies relating to the side effect profile of specific drugs. [31] For example sedation with antihistamines.

Self-treatment can mask the signs and symptoms of malignant and potentially fatal diseases so the physicians can overlook them easily. Gender difference appears to be important factor in self-medication patterns even in young adults, such as students. The physicians should actively seek the presence of self-medication in this population.

#### **GENDER DIFFERENCE AND SELF MEDICATION**

Self-medication patterns in adults depend on sex. More female students than male ones acquired the drugs for self-medication. Another study conducted in Mexico revealed that females practiced more self medication (61.9%) than males did (38.1%) and identified women as fundamental element in the consumption of drugs and employment of self medication. [32]. Studies conducted in Spain showed that Self-medication is more prevalent among women, persons who live alone, and persons who live in large cities. [33, 34] Inappropriate or unsafe use should be properly addressed and managed. [35, 36]

#### **SELF MEDICATION IN PAKISTAN**

The prevalence of self-medication practices is alarmingly high in the educated youth of Pakistan, despite majority being aware of its harmful effects. There is a need to educate the youth to ensure safe practices. Strict policies need to be implemented on the advertising and selling of medications to prevent this problem from escalating. [37] Commonly abused and misused drugs include tobacco (nicotine), alcohol, cannabinoids, opioids, stimulants, club drugs, dissociative drugs, hallucinogens, anabolic steroids and inhalants. [38] In Pakistan the truck drivers misuse and abuse chlorpheniramine maleate easily available as OTC product. An epidemiological study on self care and self medication is being conducted in Department of pharmacy, Lahore College for Women University, Lahore.

#### **HEALTH LITERACY AND SELF MEDICATION**

Self medication must also be seen in the context of health literacy. Functional health literacy is the ability to read, understand, and act on health information. The consequences of inadequate health literacy include poorer health status, lack of knowledge about medical care and medical conditions, decreased comprehension of medical information, lack of understanding and use of

preventive services, poorer self-reported health, poorer compliance rates, increased hospitalizations, and increased health care costs. [39]

#### OTC SWITCH AND SELF MEDICATION

FDA has strongly advocated that labeling of the OTC drugs should be easy to understand by the consumer and should contain the list of active ingredients, warnings, directions and inactive ingredients. [40]

The classes of drugs available over the counter are expanding to include those used for prevention of serious illness. For example simvastatin in the United Kingdom, omeprazole in Sweden, and loratadine in the United States. [41]

In recent years there has been an increasing trend in self-medication with non-prescription drugs [ over-the-counter (OTC) medicines] available in pharmacies and in retail outlets. In parallel, more products have been deregulated for purchase without a prescription.[42]

Whenever an over-the-counter (OTC) medicine is used, reading the drug product's labeling is important for taking care of yourself and your family. The label tells what the medicine is supposed to do, who should or shouldn't take it, and how to use it. The labeling of OTC medicines has always contained usage and safety information for consumers. [43].

#### POSITIVE OUTCOMES OF SELF MEDICATION

Self-medication also has advantages for healthcare systems as it facilitates better use of clinical skills, increases access to medication and may contribute to reducing prescribed drug costs associated with publicly funded health programs. [44]

#### CONCLUSION AND RECOMMENDATIONS

- Easy availability of a wide range of drugs without prescription of registered prescriber in Pakistan is the major factor responsible for irrational use of drugs as self-medication, thus resulting into imminent health problems (antimicrobial resistance, increased load of mortality and morbidity) and economic loss.
- The need for promoting appropriate use of drugs in health care system is not only because of the financial reasons with which policy makers and managers are usually most concerned, but also for health and medical care of patients and the community. There is need for authorities to make the existing laws regarding OTC drugs strong to ensure their rational sale and use.

Moreover, specific pharmacovigilance is needed and the patient, pharmacist and physician must be confident to report any adverse events. Periodic studies on the knowledge, attitude and practice of self-medication may give insight into the changing pattern of drug use in societies.

- Self-medication, using non-prescription drugs, could be beneficial to patients, healthcare professionals, the pharmaceutical industry and governments, provided these drugs are used rationally. Apart from community education, safety and efficacy of OTC drugs must be assured, so that these products could be safe even in the event of improper use. For registration as an OTC drug, specific efficacy trials may be conducted in real self-medication situation. Switching of prescription drugs to over the counter availability is increasingly common. For patients, the trend towards more switches will take self-care to a new level, focused increasingly on chronic prevention of serious illnesses.
- The main motives for switching are the self-care movement, attempts to reduce drug bills and in some way pharmaceutical firms' desire to expand their market.
- Health education campaigns, strict legislations on dispensing drugs from private pharmacies and increasing the quality of and access to health care are among the important interventions that might be needed in order to change the people's health seeking behavior and protect them from the potential risks of self-medications. [45]
- In conclusion, self-medication is practiced with a range of drugs from the conventional painkillers to antibiotics. Although the practice of self-medication is inevitable; drug authorities and health professionals need to educate people about the pros and cons of self-medication.
- The implementation of the regulations and guidelines will improve the consumer's ability to diagnose and treat oneself when sick with minor ailments, without consulting a doctor. [46]
- Monitoring schemes, a partnership between patients, physicians and pharmacists and the provision of education and information to all concerned on safe self-medication, are proposed strategies for maximizing benefit and minimizing risk.
- Self medication is becoming an increasingly important area within healthcare. It moves patients towards greater independence in making decisions about management of minor illnesses,

thereby promoting empowerment. Self medication also has advantages for healthcare systems as it facilitates better use of clinical skills, increases access to medication and may contribute to reducing prescribed drug costs associated with publicly funded health programmes. However, self medication is associated with risks such as misdiagnosis, use of excessive drug dosage, prolonged duration of use, drug interactions and polypharmacy. The latter may be particularly problematic in the elderly.

- Some conditions are necessary for this remuneration to be realized. These conditions aim at ensuring the safety of taking self-medicated drugs. They include the following: the drugs used are those indicated for conditions that are self-recognizable; the user should know how to take or use the drugs; the effects and possible side-effects of the drug as well as ways of monitoring these side-effects are well communicated to the user; possible interaction with other drugs is known by the user; duration of the course of the drugs is known by the user and when the user must seek professional intercession.
- The medical community must acknowledge this issue and develop strategies to ensure that patients receive assistance in overcoming the barriers that limit their ability to function adequately in the health care environment.
- Finally we recommend that further studies on self medication have to be carried out in Pakistan.

#### REFERENCES

- 1 WHO guidelines for the regulatory assessment of medicinal products for use in self-medication, 2000. Available from [www.who.int/medicines/library/qsm/whoedm-qsm-2000-1/who-edm-qsm-00\\_1.htm](http://www.who.int/medicines/library/qsm/whoedm-qsm-2000-1/who-edm-qsm-00_1.htm). Accessed on 20-9-2011.
- 2 Montastruc JL, Bagheri H, Geraud T, Lapeyre-Mestre M. Pharmacovigilance of self-medication. *Therapie* 1997; 52: 105-10.
- 3 Filho L, Antonio I, Lima-Costa MF, Uchoa E. Bambui Project: a qualitative approach to self-medication. *Cad Saude Publica* 2004; 20: 1661-9.
- 4 Joint Statement by The International Pharmaceutical Federation and The World Self-Medication Industry 1999. Available at <http://www.wsmi.org>. Accessed on 20-9-2011.
- 5 World Health Organization: The role of the pharmacist in self-care and self-medication. Report of the 4th WHO consultative group on the role of the pharmacist. The Hague, 1998. Available from <http://www.who.int/medicines/library/dap/who-dap-98-13/who-dap-98-13.pdf>. Accessed on 20-9-2011
- 6 Bradley C, Blenkinsopp A. Over the counter drugs: the future for self-medication. *BMJ* 1996; 312:835-837.
- 7 AESGP (2004). The economic and public health value of self-medication. Brussels, Belgium. Available from: <http://www.aesgp.be/researchproject/finalreport.pdf>. Accessed on 22-9-2011.
- 8 Vucic VA, Trkulja V, Lackovic Z. Content of home pharmacies and self-medication practices in households of pharmacy and medical students in Zagreb, Croatia: findings in 2001 with a reference to 1977. *Croat Med J* 2005; 46: 74-80.
- 9 Bruden P. World drug situation. Geneva: WHO; 1988.
- 10 Hughes C. Monitoring self-medication. *Expert Opin Drug Saf* 2003; 2: 1-5.
- 11 Hughes GF, McElnay JC, Hughes CM, McKenna P. Abuse/misuse of non-prescription drugs. *Pharm World Sci* 1999; 21: 251-255.
- 12 Akram G. Over-the-counter medication: an emerging and neglected drug abuse? *J Substance Use* 2000; 5: 136-142.
- 13 Hebeeb GE, Gearhart JG. Common patient symptoms: Patterns of self-treatment and prevention. *J Miss State Med Assoc* 1993; 34:179-81.
- 14 Sharma R, Verma U, Sharma CL, Kapoor B. Self-medication among urban population of Jammu city. *Indian J Pharmacol* 2005; 37:40-3
- 15 S M Abay and W Amelo1. Assessment of Self-Medication Practices among Medical, Pharmacy, and Health Science Students in Gondar University, Ethiopia. *J Young Pharm.* 2010 Jul-Sep; 2(3): 306-310.
- 16 C.O .Omolase, O.E.Adeleke, A.O.Afolabi, O.T.Afolabi. Self medication amongst general outpatients in a Nigerian community hospital. *Annals of Ibadan postgraduate medicine vol 5 no. 2 December 2007.*
- 17 Solomon Worku, Abebe G Mariam. Practice of self medication in Jimma town Ethiopian journal of health development 2003; 17(2):111-116
- 18 Murray MD, Callahan CM. Improving medication use for older Adults: An integrated research agenda. *Ann Intern Med* 2003; 139:2425-9.
- 19 Sturm AW, van der Pol R, Smits AJ, van Hellemond FM, Mouton SW, Jamil B, Minai AM, Sampers GH. Over-the-counter availability of antimicrobial agents, self-medication and patterns of resistance in Karachi, Pakistan. *J Antimicrob Chemother.* 1997 Apr; 39(4):543-7.
- 20 Bauchner H, Wise P. Antibiotics without prescription: "bacterial or medical resistance"? *Lancet* 2000; 355: 1480-84.
- 21 Chang F, Trivedi PK, Economics of self-medication: theory and evidence. *Health Economics* 2003; 12: 721-739
- 22 Neafsey PJ, Self-medication practices that alter the efficacy of selected cardiac medications. *Home Healthc Nurse* 2004; 22: 88-98.
- 23 Nordeng H, Havnen GC. Impact of socio-demographic factors, knowledge and attitude on the use of herbal drugs in pregnancy. *Acta Obstet Gynecol Scand* 2005; 84: 26-33
- 24 Pagane JA, Ross S, Yaw J, Polsky D. Self-medication and health insurance coverage in Mexico. *Health Policy* 2007; 75: 170-177.
- 25 Linda Aagaard Thomsen, Almut G Winterstein, Birthe Søndergaard, Lotte Stig Haugbølle, Arne Melander. Systematic Review of the Incidence and Characteristics of Preventable Adverse Drug Events in Ambulatory Care. *Ann Pharmacother* September 2007; 41(9) 1411-1426
- 26 Visser LE, Graatsma HH, Stricker BH: Contraindicated NSAIDs are frequently prescribed to elderly patients with peptic ulcer disease. *Br J Clin Pharmacol* 2002, 53(2):183-188.

- 27 Honig PK, Gillespie BK: Clinical significance of pharmacokinetic drug interactions with over-the-counter (OTC) drugs. *Clin Pharmacokinet* 1998, 35(3):167-171.
- 28 Calabresi P, Cupini LM. Medication-overuse headache: similarities with drug addiction. *Trends Pharmacol Sci* 2005; 26: 62-8.
- 29 Ashina S, Zeeberg P, Jensen RH, Ashina M. [Medication overuse headache]. *Ugeskr Laeger* 2006; 168: 1015-9.
- 30 Assael L. The pill culture, the pill society. *J Oral Maxillofac Surg* 2006; 64: 1331-2.
- 31 Tackett B, Smith M, Nedorost S. Morbidity of over-the-counter topical steroids. *J Am Acad Dermatol* 2006; 54: 182; author reply 182-3.
- 32 Angeles C P. Self medication in urban population of Cuernavaca, Mexico 1992; 34(5):554-61
- 33 Adolfo Figueiras, Francisco Caamano and Juan Jesus Gestal-Otero. Sociodemographic factors related to self-medication in Spain. *European Journal of Epidemiology* 2000 ; 16(1) : 19-26
- 34 Carrasco-Garrido P, Hernández-Barrera V, López de Andrés A, Jiménez-Trujillo I, Jiménez-García R .Sex differences on self medication in Spain. *Pharmacoepidemiol Drug Saf.* 2010 Dec; 19(12):1293-9.
- 35 French L, Horton J, Matousek M. Abnormal vaginal discharge: what does and does not work in treating underlying causes. *J Fam Pract* 2004; 53: 805-14.
- 36 Klemenc-Ketis Z, Hladnik Z, Kersnik J A cross sectional study of sex differences in self-medication practices among university students in Slovenia *Coll Antropol* 2011; 35(2):329-34.
- 37 Syed Nabeel Zafar, Reema Syed, Sana Waqar, Akbar Jaleel Zubairi, Talha Vaqar, Mehreen Shaikh, Wajeeha Yousaf, Saman Shahid Sarah Saleem. Self-medication amongst University Students of Karachi: Prevalence, Knowledge and Attitudes. *JPMA* 2008 58:214.
- 38 The science of drug abuse and addiction. Available at <http://www.drugabuse.gov>. Accessed on 20-9-2011
- 39 Andrus MR, Roth MT. Health literacy. *Pharmacotherapy.* 2002 Mar; 22(3):282-302.
- 40 Drug information clearly better? US consumers benefit from new nonprescription drug labels. *Essential drugs monitor (WHO)* 1999; 27:10.
- 41 Joshua P Cohen, Cherie Paquette, Catherine P Cairns, Education and debate Switching prescription drugs to over the counter *BMJ* 2004 Dec; 330: 39.
- 42 Bond C. POM To P—Implications for Practice Pharmacists. *Prim Care Pharm* 2001; 2: 5–7.
- 43 labelling of OTC medicines. Available at <http://www.fda.gov>. accessed on 23-9-2011
- 44 Hughes CM, McElnay JC, Fleming GF. Benefits and risks of self-medication. *Drug Saf.* 2001; 24(14):1027-37.
- 45 Alghanim SA Self-medication practices among patients in a public health care system. *East Mediterr Health J* 2011; 17(5):409-16.
- 46 Abadi-Korek I, Vaknin S, Marom E, Shemer J, Luxenburg O Over the counter drugs--a new era in Israel. *Harefuah* 2011; 150(1):29-32, 69, 68.