

**Causes that induce self-medication in first and fifth year students of the USFX School of Medicine****Causas que inducen la automedicación en estudiantes de primer y quinto curso de la Facultad de Medicina de la USFX**

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**Abstract**

**Introduction:** We live in a society that encourages self-medication and one reason is the availability of drugs that do not require a prescription and are easily accessible, the abuse of these have important implications for the health of the general population; being the most commonly used drugs: analgesics, antibiotics, antihistamines and others. **Objective:** Determine the causes that induce self-medication in freshmen and fifth year of the Faculty of Medicine of the Universidad Mayor, Real y Pontificia de San Francisco Xavier de Chuquisaca - Bolivia, 2012. **Methodology:** Quantitative and descriptive cross-sectional approach. A sample of 284 students which they apply structural survey was obtained. **Results.** A high percentage of students who are self-medicating themselves without medical supervision. **Conclusions:** We can say that self-medication on freshmen and fifth year of medical school at the University Of San Francisco Xavier De Chuquisaca is induced by influence of social circle (friends and parents), advertising of certain medications, access to internet and lack of time.

**Students, Areas of influence, Drugs, Resistance****Resumen**

**Introducción:** Vivimos en una sociedad que fomenta la automedicación y una de las razones es la disponibilidad de fármacos que no requieren prescripción médica y son de fácil acceso, el abuso de estos tienen importantes implicaciones para la salud de la población en general; siendo los fármacos más utilizados: analgésicos, antibióticos, antihistamínicos y otros. **Objetivo:** Determinar las causas que inducen a la automedicación en estudiantes de primer y quinto año de la Facultad de Medicina de la Universidad Mayor, Real y Pontificia de San Francisco Xavier de Chuquisaca - Bolivia, 2012. **Metodología:** Enfoque cuantitativo y descriptivo de corte transversal. Se obtuvo una muestra de 284 estudiantes que aplican encuesta estructural. **Resultados.** Alto porcentaje de estudiantes que se automedican sin supervisión médica. **Conclusiones:** Podemos decir que la automedicación en estudiantes de primer y quinto año de la carrera de medicina de la Universidad De San Francisco Xavier De Chuquisaca es inducida por influencia del círculo social (amigos y padres), publicidad de ciertos medicamentos, acceso a internet y falta de tiempo.

**Estudiantes, Áreas de influencia, Medicamentos, Resistencia**

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## Introduction

The ease of use, availability, over-the-counter sale and easy accessibility of medicines can lead not only to errors in their application, but also in the overall approach to the disease for which they are intended. It has become routine to take drugs to cheer up, to relax for headaches, stomach aches or other ailments.

The patient self-medicates not only with over-the-counter drugs but also with prescription drugs. This behaviour induces the irrational use of commonly used drugs such as analgesics, antibiotics, antihistamines, antacids, anti-inflammatory drugs, systemic contraceptives, and yet the dangers are manifold. For example, drugs are abused to obtain effects that have nothing to do with their properties. The result is the opposite of what is desired, and can cause complications, illnesses over time, and even loss of action when it is really needed. The risk factors that predispose to this behaviour are very important, such as lack of time to go to a doctor's office, lack of interest in going to the university social security, web influences, social influences, advertising and knowledge of pharmacology.

The aim is to make the general population aware of all the problems that self-medication brings with it, to analyse the factors that influence the indiscriminate use of medicines and to carry out the corresponding activities to corroborate the proper use of medicines; in this way we will centralise a realistic awareness of what it means to make proper use of medicines, all medical devices and of who should handle them safely and with regulatory competence.

The present research study was developed with a quantitative, descriptive, cross-sectional approach, including a universe of 1076 regular students in the first (643 students) and fifth (433 students) years of the Faculty of Medicine of the University of San Francisco Xavier de Chuquisaca, with a sample obtained by convenience of 284 students enrolled in the previously mentioned courses during 2012, representing 60% first-year students and 40% fifth-year students. Students with regular class attendance were included, excluding those who did not attend.

The results were evaluated on the basis of a closed-response survey, taking into account the variables of year of study, affiliation, time available to attend a medical consultation, influence of the internet and social circle. With regard to the state of the art, the same approach is taken, which is consistent with the methodology described above.

The main results are that there is an 81.3% prevalence of self-medication in first and fifth year students. Regarding the existence of a relationship between the self-medication of parents and university students in their first and fifth year, the prevalence was 62.9% and 73.8% respectively; and the existence of a relationship between the advice of a friend and the self-medication of university students in their first and fifth year, the prevalence was 63.6% and 75.7% respectively. With regard to the induction of advertising spaces towards self-medication, the results showed a prevalence of 63.3% in the first year and 63.1% in the fifth year.

The use of the internet as another influential factor for self-medication among first and fifth year university students showed a prevalence of 45% and 48.8% in both years out of 100%.

It is therefore concluded that self-medication in first and fifth year students of the Faculty of Medicine of the University of San Francisco Xavier de Chuquisaca is induced by the social circle (friends and parents), advertising of some medicines, access to the internet and lack of time that induces fifth year students; while not being affiliated to the university insurance does not induce self-medication in any course and lack of time does not induce first year students.

## General objective

To determine the causes that induce self-medication in first and fifth year students of the Faculty of Medicine, Sucre - Bolivia, 2012.

**Specific**

1. To identify which of the courses studied has a higher prevalence of self-medication in students surveyed in the first and fifth years of the Faculty of Medicine at the University of San Francisco Xavier de Chuquisaca, Sucre 2012.
2. To determine whether the social circle induces self-medication in surveyed students in the first and fifth years of medical school at the University of San Francisco Xavier de Chuquisaca, Sucre 2012.
3. To determine whether advertising in different media influences self-medication in surveyed students in the first and fifth years of the faculty of medicine at the University of San Francisco Xavier de Chuquisaca, Sucre 2012.56

**Theoretical framework**

An important fact worldwide is the existence of Reye's syndrome, which is a serious process with hepatic and cerebral involvement caused by the indiscriminate use of acetylsalicylic acid (aspirin). Chronic abuse of paracetamol as an analgesic or antipyretic can be very harmful to health, as it causes liver failure, often resulting in death.

It is estimated that 11% of all cases of end-stage renal failure, with an incidence of around 110 new cases per 1000000 population, are attributed to analgesic use. The vast majority of studies carried out in various countries in America, Asia and Europe report that the consumption of over-the-counter or previously prescribed drugs is higher in females (67%) than in males (33%), the age range most likely to self-medicate is between 25 and 44 years old (50%), 18 to 24 years old (10%) and over 45 years old (40%). At the national level, the Ministry of Health presumes that in Bolivia self-medication is higher than 17%, the Pan American Health Organisation (PAHO) says that in Bolivia the use of antibiotics is irrational and warns that the irrational use of antibiotics is increasing in the country, which could be generating greater resistance to these drugs in patients.

The consultant on communicable diseases for the international organisation in Bolivia said that one of the main causes is "cultural management" to treat certain diseases. In other words, people self-medicate and buy one or two antibiotics without following a complete treatment and not 21, which would be the right thing to do. This, in the long run, leads to resistance of the micro-organism.

In the US, where the pharmaceutical market is highly regulated, it is estimated that each person spends on average US\$ 100 per year on so-called "over-the-counter" (OTC) drugs. The number of drugs authorised for OTC use in the US has been increasing over the years, but most of them only offer relief for acute and generally self-limiting conditions. Although the type of medicines and dosage forms available for this use in the US are restricted, 94% of people who use over-the-counter medicines surveyed said they would be careful when using them, 93% read the instructions before taking the medicine for the first time, and 70% would call their doctor if they were unsure how to take it.

**Over-the-counter medicines**

Medicines are differentiated on the basis of the risks associated with their use into prescription medicines and OTC medicines. According to WHO (1986), OTC medicines have lower risk characteristics and should be:

- Effective: on the symptoms that motivate their use, which should generally be self-limiting in nature.
- Reliable: they should give a consistent and sufficiently rapid response, so that the patient notices their beneficial effects.
- Safe: they should be used in situations with a good prognosis and whose identification is not difficult for the layperson.
- Easy and convenient to use: so that the user does not require complex or unusual precautions.
- Wide therapeutic range: so that dosing errors do not have serious repercussions.

- Leaflet: should include a leaflet with specifications for consulting a doctor.

The competent authorities in each country must ensure the safety, quality and efficacy of medicines and are responsible for authorising and monitoring the marketing of medicines.

The World Health Organisation (WHO) recently passed the Medicines Act in 2008, the main objective of which is to put an end to self-medication once and for all. A system of fines of 30,000 to 90,000 Euros is imposed on pharmacists who sell prescription drugs. The WHO has warned about the abuse of this practice with the Medicines Act.

### **Common mistakes of self-medication**

The ease of use and free availability of OTC medicines can lead not only to errors in their application but also in the overall approach to the disease for which they are intended.

Patients self-medicate not only with OTC medicines but also with prescription medicines. This behaviour leads to irrational use of medicines.

The most commonly used medicines and their effects are the following analgesics:

One of the risks of regular use of painkillers is interstitial nephritis. It is estimated that 11% of all cases of end-stage renal failure, the incidence of which is about 110 new cases per 1,000,000, is attributed to analgesic use.

Unsupervised pain management has been complicated by the widespread use of non-steroidal anti-inflammatory drugs (NSAIDs) for this indication. Their increasing use increases the risks of adverse effects, both in prescription and self-medication. The incidence of upper gastrointestinal bleeding (UGH) is 650 cases per 1,000,000 inhabitants/year, 40% of which are attributable to acetylsalicylic acid and the other NSAIDs. A common misconception is the overuse of analgesics for the treatment of headache. Patients suffering from migraine and tension headache are not always diagnosed, they have never received a clinical and therapeutic assessment to understand and treat their disease.

Patients opt for the indiscriminate and disordered use of painkillers, with or without prescription, to alleviate their symptoms as much as possible. This negative and commonplace scenario is observed in many chronic daily headache patients with analgesic abuse, regardless of whether the initial cause of the headache is the evolution of their migraine or the result of very frequent episodes of tension headache.

Self-medication with analgesics is a major problem in our country. Regular and frequent use of analgesics such as aspirin, codeine, dextropropoxyphene and paracetamol, particularly when taken together to treat non-specific headaches, can cause chronic headache as a paradoxical reaction.

### **Antibiotics**

There is a great cultural expectation around this group of drugs. People expect definitive cure of a threatening infection through their use. In addition, patients report in the pharmacy that most of them have an antibiotic in their medicine cabinet from the previous medical consultation and would take it again without a previous medical visit.

In Spain, it has been shown that 25% of the 80 million packs of antibiotics per year are consumed without a doctor's prescription. A notable error in this therapeutic group is the discontinuation of the antibiotic before the end of the prescribed treatment as soon as symptoms begin to disappear. Some results show that only 6.5% of adults and 30.3% of children comply with the appropriate dosage and duration of treatment.

### **Antihistamines**

For example, prolonged or excessive use of vasoconstrictor nasal decongestants can cause "rebound" congestion which, in turn, can lead to chronic mucosal inflammation and obstruction of the nasal passages.

**Other medications**

Any medicine, regardless of its risk-benefit profile, can be misused. A survey conducted in 2000 in the population of Campo Grande (Mato Grosso Do Sul, Brazil) 15 showed that analgesics, antacids, anti-inflammatory drugs, systemic contraceptives and systemic antibacterials were the most commonly used pharmacological groups in self-medication.

**Definition of responsible self-medication**

The World Health Organisation (WHO) defined the concept of responsible self-medication as comprising the use of medicines by the consumer to prevent and manage self-recognisable disorders or symptoms.

As it stands, this seems to be an appropriate alternative to solve the user's problems, as it would allow for the rational, informed and safe use of OTC medicines.

The institution sees responsible self-medication as a valid formula for health care in developed societies, stressing that the strategic role of the physician should not be neglected.

The WHO's objectives in proposing responsible self-medication are to prevent and treat symptoms and minor health problems that do not require medical consultation; to reduce the continuing pressure on medical services for the relief of such problems, especially when resources are limited; to increase the availability of resources for the care of rural or remote populations where access to medical services is difficult; and to help chronic patients manage their condition.

There are a number of factors that need to be in place for self-medication to be positive. The role of the pharmacist internationally has been changing over the last two decades, becoming a responsible guide to daily health care and a key figure in the medicines supply chain. Their education and training equips them to provide sound information about these products.

Also the recent developments of new, more effective medicines considered suitable for oral or topical open access, and the reconsideration of old ones for recognised safety, make an interesting range of self-manageable alternatives available to the population.

As a pharmaceutical industry, we have a major role to play in responsible self-medication. That is why we provide medicines with high standards of safety, quality and efficacy, complying with all legal requirements for packaging and labelling, using clear warnings in the package leaflets and all necessary information to guide the patient and the pharmacist, encouraging people to treat medicines with care and to use them with proper professional guidance.

As it stands, this seems to be a suitable alternative to solve the user's problems, as it would allow the rational, informed and safe use of OTC medicines. The institution sees responsible self-medication as a valid formula for health care in developed societies, stressing that the strategic role of the physician should not be neglected.

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**Methodology**

The study was conducted at the Faculty of Medicine of the University of San Francisco Xavier de Chuquisaca. A quantitative, descriptive, cross-sectional approach was used for the study. The sample obtained was 284 students enrolled in the first and fifth years of the Faculty of Medicine.

**Results**

Table 1.- The table shows the prevalence of self-medication in 284 students surveyed at the UMRPSFXCH medical school in the 1st and 5th years, where 231 students responded that they do self-medicate, representing 81.3% of the total, while 53 students responded that they do not self-medicate, representing 18.7% of the total.

Self-medicating	Frequency	Percentage
Yes	231	81,3%
No	53	18,7%
Total	284	100,0%

**Table 1** Prevalence of self-medication in students surveyed in the first and fifth year of study

The following table shows that family influence is important at the time of self-medication, since of the 284 students surveyed, 52 responded that their parents had never self-medicated, corresponding to 18.3%; 40 students responded that they did not know if their parents had ever self-medicated, which corresponds to 14.1%; while 192 students responded that their parents had ever self-medicated, corresponding to the great majority with 67.6%.

1. did your parents go to self-medicate ever ever?	Frequency	Percentage	Percentage
No	52	18,3%	18,3%
Don't know	40	14,1%	32,4%
Yes	192	67,6%	100,0%
Total		67,6%	100,0%

**Table 2** Influence of the social circle on self-medication in first and fifth year students

As can be seen in the table below the influence of the media is significant as 171 respondents representing 60.2% responded that they did self-medicate because of the media, while 113 respondents representing 39.8% did NOT pay attention to the media regarding self-medication.

Based on the results of the research carried out, we can affirm that in the first year there is a prevalence of self-medication of 82.4%, while in the fifth year it is higher at 90.4%.

Prevalence	Firts	Frequency	Fifth	Frequency
Yes	140	82.4%	103	90.4%
No	30	17.6%	11	9.6%
Total	170	100%	114	100%

**Table 3** Prevalence of self-medication in students surveyed according to their year of schooling

**Conclusions**

In conclusion, we can affirm that self-medication in first and fifth year students of the Faculty of Medicine of the University of San Francisco Xavier de Chuquisaca is induced by the social circle (friends and parents), the advertising of some medicines, access to the internet, and the lack of time, which only induces fifth year students; while not being affiliated to the university insurance does not induce self-medication in any year and the lack of time does not induce first year students.

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