

## **Ethical aspects in the prescription of drugs for the dependents of pharmacies**

### **Aspectos éticos en la prescripción de medicamentos por los dependientes de farmacias**

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## **INTRODUCTION**

Self-medication, traditionally defined as “taking drugs, grasses or home remedies, on one’s own initiative or for someone else’s, without consulting to a doctor”. This is more and more common in the world, encouraged for the governments of different countries and supported by the pharmaceutical industry.

Also, self-medication could be define as the treatment of common health problems with drugs, especially designed and labeled for use without medical supervision and approval as safe and effective for using.

Every day, everywhere, the consumers search for products of auto-care to help them through their common health problems. They do it, because they can be easier for them, they can be more expensive or efficient time, they cannot feel that they situation deserve to make an appointment with a health professional, or they can have few or any option.

The study based on an elder population from the Family Health Program in *Porto Alegre, Rio Grande do Sul*, it allowed to research correlated factors like socio-demographic and health data; demonstrated that hepatic disease and osteoarthritis / arthritis / rheumatism were associated with the use of anti-inflammatory and analgesics. Besides, most of elder individuals used drugs when only they needed, probably due to feel a light or moderate pain or because they had suffered the adverse effects of these drugs in the past and they elected using them occasionally.

The evaluation of self-medication also was applied in a population of Rumania, the present study assumed 421 individuals with ages from 20 to 90 years old, its objective was to evaluate the prevalence use of analgesics, anti-inflammatory and antipyretic like drugs for self-medication in a population's group in the northeast of Rumania (rural in front of urban zones) and to know the medical reasons for their administration. The method of the questionnaire was applied to two groups of individuals at rural and urban zones of the northeast of Rumania.

The study duration was in six months (from August 2013 to March 2014), while self-medication was monitored:

- The 55,3% was from urban zones vs 44,7% of rural zones, being women the dominants (75,5%).
- The medicine that were tracked were used by the 84,8% of the participants.
- The Paracetamol (46,6%), the Ibuprofeno (30,4%) and the Metamizol (12,7%) are among the more used analgesics, in urban and rural zones.
- The more frequent symptoms that required self-medication were Cephalea (urban and rural zones), respiratory disorders (urban zones) and osteoarticulars problems (rural zones).

Nowadays, the self-medication could not be the true problem, but the lack of strict measures, which must be introduced to stop the supply of drugs, prescribed from pharmacies over-the-counter.

The auto-medication rate among the inhabitants all over the world is high. As a result, they must take measures, urgently, to initiate an awareness-raising and educational program about the potential risks that they could cause and they are causing to health.

Pharmacists and drugs manufacturers no subjected to prescription, have the responsibility to provide high-quality services to the public and to foment the responsible use of drugs. Therefore, they are engaged to be adequately qualified and trained to give people advice about drugs. The publicity, in the same way, it is also useful for reporting to people about the available drugs over-the-counter.

The persons in charge to offer this service must be always responsible and they must not discourage the person to look for a doctor's advising when it is necessary, in order to avoid any type of complication that could be presented in the natural history of the disease.

The chain of drugs use involves the processes of acquisition, storage, distribution, medication prescriptions, patient's behavior, and the result of the treatment revision. Each event is a transcendental aspect in the drug use, and the majority of the countries with regulations to protect these aspects.

The pharmacists and other persons in charge of drug market can prescribe the drugs over-the-counter or drugs prepared by pharmaceuticals that they do not require a doctor's prescription. The data on these drugs can be difficult to obtain, especially in environments with weak drugs regulation and bad maintenance of records, but when the aforementioned information is available in the register of existence or dispensation, it increases the understanding of the standard drugs use.

### **Developing**

This is a transverse analytical study, developed from June to December 2016. They were selected five provinces from Ecuador (Manabí, Guayas, El Oro, Gold, Pichincha and Loja) with a total register of 996 pharmacies, according to the information of the Ministry of Public Health.

For the esteem of the sample, it was considered a confidence level of 95%, a significant level of 5%, in effect and a sample design effect of 1,5 %, obtaining a sample of 255 pharmacies.

It was prepared a group of students from Nursing career of the *Universidad Estatal del Sur de Manabí*, selected for ages ranging (from 18 to 20) and weight ( $\bar{x}$  70 kg). The symptomatology that they expressed was "Presentation of a painful symptom in the lumbar region, for three consecutive days".

A questionnaire was designed that included eight items or aspects in four mastery of: Symptomatology, Allergic antecedent, dosage and information on chronic diseases non-transmissible.

The logical and contents validity was evaluated by means of experts' opinion, composed of a multi-disciplinary group of 12 health professionals, that evaluated the instrument of independent and closed manner, all of them with more than five years of experience in the prescription and drugs administering.

The first version of the instrument was also applied for a pilot group of 52 dependents of pharmacies to evaluate the level of understanding, legibility and reproducibility.

For the development of this research, they were taken into account five provinces, to take advantage of the students-researchers' origin, who developed this work during the vacation period.

In Table No.1, they are shown the quantity of pharmacies that were included in the study, taking into account that Manabí province is where the amount sample was taken because the university is located in this province.

Table No.1: Researched pharmacies by provinces.

Provinces	Amount of pharmacies	Percentage
Manabí	213	84
Pichincha	14	5
El Oro	10	4
Guayas	13	5
Loja	5	2
TOTAL	255	100

SOURCE: Dependents of pharmacies of Ecuador

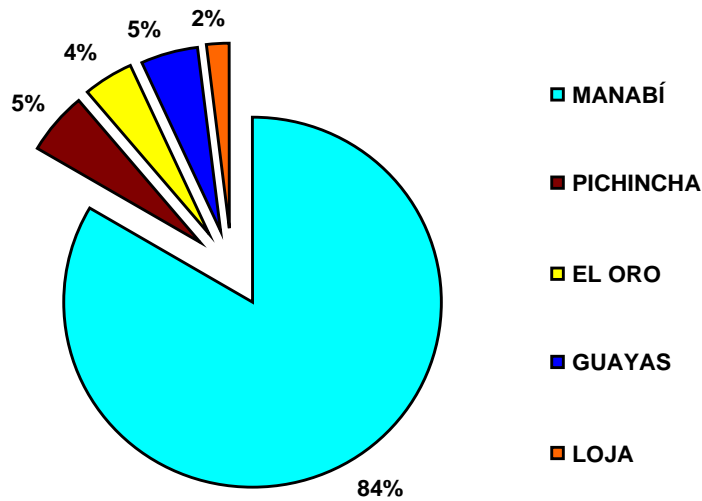


Fig. 1: Amount of researched pharmacies by provinces.

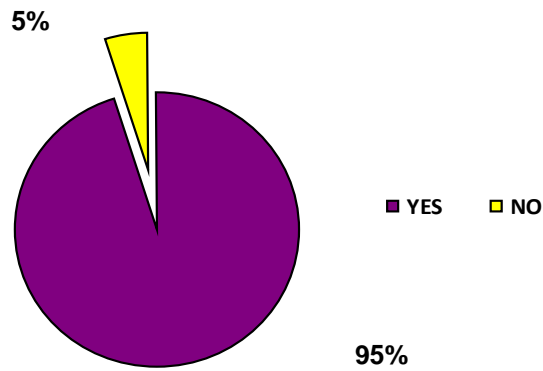
The indicator research key was the one that the pharmacy required whose dependent prescribed a medication over-the-counter, based on to what the patient recognized of his symptomatology.

In Table No. 2, it can be shown that 95.29% of the dependents of pharmacies offered the service without responsibility, demonstrating a scarce practice of ethical principles in the handling of the patients' health, even mores, taking in account that most of the dependents have bachelor's formation.

Table No. 2: Pharmacies that sold drugs without prescription.

Alternatives	Frequency	Percentage
Yes	243	95
No	12	5
TOTAL	255	100

SOURCE: Dependents of pharmacies of Ecuador



**Fig. 2: Amount of pharmacies that sold drugs without prescription.**

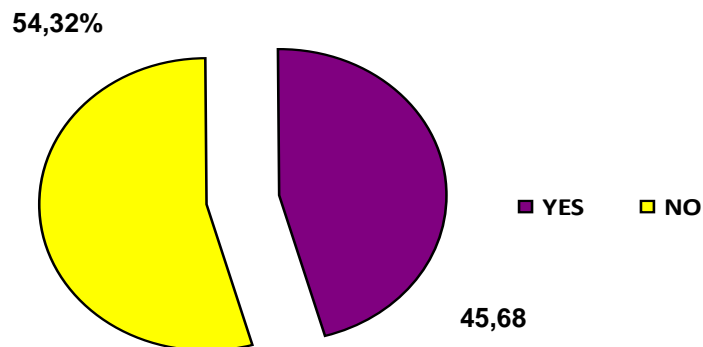
The data recording of the visits realized to the pharmacies, only continued with those that sold drugs over-the-counter, as they are expressed in the Table No. 2. Continuing with the information, it was registered the pharmacists' behavior, that is, the questions they asked to the patients, and the behavior they adopted in front of their manifestations.

In Table No. 3, it is expressed that the 54,32% sold the medication without asking about if there was any type of important medical antecedent, that can cause some no desired effect in the patients' health. It is pertinent to stand out that the 45,68% that kept a dialogue with the patients, in some cases, exercised empirical approaches in order to detect some kind of pathology.

**Table No. 3: Dependents that asked for the existence of allergic problems.**

Alternatives	Frequency	Percentage
Yes	111	45,68
No	132	54,32
<b>Total</b>	<b>243</b>	<b>100,00</b>

**SOURCE:** Dependents of pharmacies of Ecuador



**Fig. 3: Amount of dependents that asked for the existence of allergic problems.**

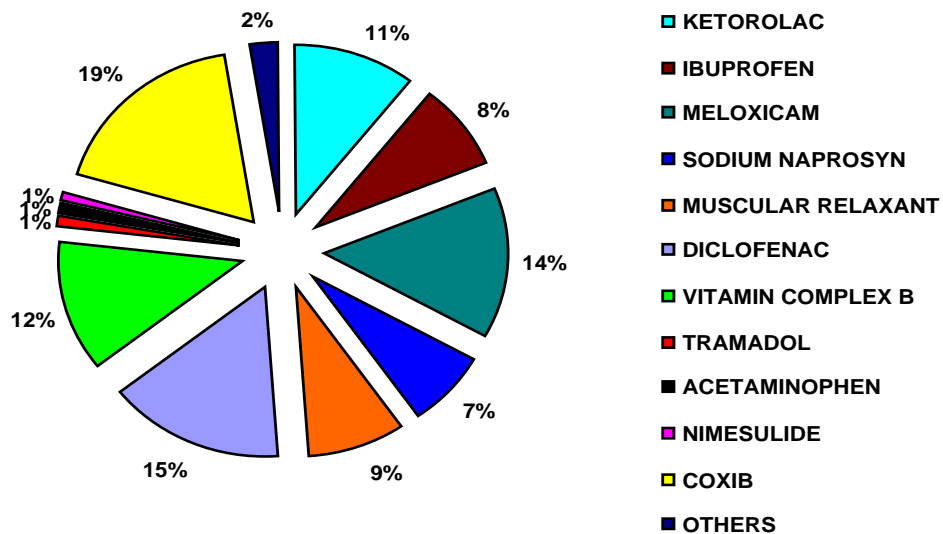
In Table No. 4, they are included the variety of drugs recommended by the pharmacist to face the supposed clinical symptoms that patients from the sample presented, it is important to point it out that most of the drugs are anti-inflammatory type, which definitely would help to the patients' well-being.

The more expended drug was the Coxib, which is a ciclooxigenasa-2 inhibitor, this drug presents hepatic metabolism and its occasional use can cause hepatic toxicity, among another adverse reactions.

**Table No.4: Drugs sold for the symptomatology indicated without medical prescription.**

Drugs	Frequency	Percentage
Ketorolac	26	10,70
Ibuprofen	20	8,23
Meloxicam	34	13,99
Sodium naprosyn	18	7,41
Muscular relaxant	21	8,64
Diclofenac	37	15,23
Vitamin Complex B	30	12,35
Tramadol	3	1,23
Acetaminophen	2	0,82
Nimesulide	2	0,82
Coxib	44	18,11
Other drugs	6	2,47
<b>TOTAL</b>	<b>243</b>	<b>100,00</b>

SOURCE: Dependents of pharmacies of Ecuador



**Fig. 4: Amount of drugs sold for the symptomatology indicated without medical prescription.**

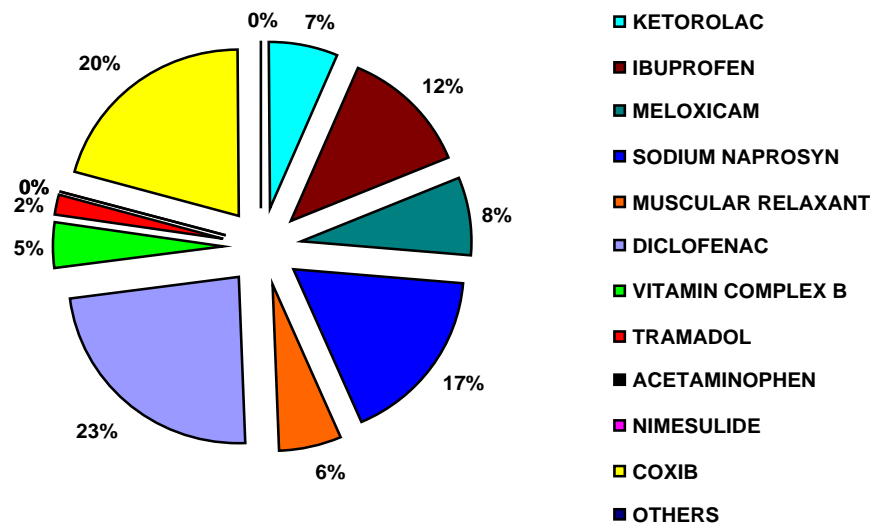
Table No. 5, shows the dossification recommended by the dependents of pharmacies, based on criteria of dosage: appropriate, inappropriate and without indications. It can be emphasized the difference of drugs dossification, without taking into account that most of them are from the drugs family group, from anti-inflammatory type.

The dosage recommended by the dependents of pharmacies, in some cases, it could not reach the drug average duration, doing that drug pharmacokinetics and pharmacodynamics do not be beneficial to the patients' well-being. On the contrary, in some cases, the dossification would reach a drug toxic concentration, causing adverse reactions in the patient's health.

Table No. 5: Recommended dosage of drugs sold for the dependents of pharmacies.

Drugs	Appropriate		Inappropriate		No prescription		TOTAL
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	
Ketorolac	7	26,92	16	61,54	3	11,54	26
Ibuprofen	13	65,00	1	5,00	6	30,00	20
Meloxicam	8	23,53	17	50,00	9	26,47	34
Sodium naprosyn	12	66,67	6	33,33	0	0,00	18
Muscular relaxant	6	28,57	10	47,62	5	23,81	21
Diclofenac	25	67,57	12	32,43	0	0,00	37
Vitamin Complex B	5	16,67	24	80,00	1	3,33	30
Tramadol	2	66,67	0	0,00	1	33,33	3
Acetaminophen	0	0,00	2	100,00	0	0,00	2
Nimesulide	0	0,00	1	50,00	1	50,00	2
Coxib	22	50,00	15	34,09	7	15,91	44
Other drugs	0	0,00	6	100,00	0	0,00	6
<b>TOTAL</b>	100	34.3	110	49.50	33	16.20	243

SOURCE: Research results



The research results appear similar to the referential studies (Dependants/Mexico) with some differences in the drug assertion that is expended at pharmacies in relation to the symptomatology that express the patients at the moment to ask for the drug in the pharmacy.

For this study, the number was bigger when it was asked about the sale or no of drugs without medical prescription, possibly related to a lack of information, so it is considered a health problem or no all-medical consultation generates a prescription.

Differences or similitudes among the numbers of drugs sales over-the-counter and others realized in Latin America pharmacies can be explained by differences in the methodology (mainly), in the population characteristics like access to health services, the socioeconomic stratum, and academic formation, among others.

The results of the present study are compared to Cuernavaca-Mexico and Cajamarca-Peru methodology finding great differences between Ecuador and Mexico, but with similar numbers to the ones belonging to Peru. Possibly, there are temporary changes, at the tendencies of self-medication, for example (flu epidemics), regarding the absence or presence of informative or introductory campaigns of new drugs, etc.

There is high consistency with the results of another studies (apart from the methodology) in relation to the drugs that are consumed after were sold by the dependents of pharmacies, which can suggest that the evaluation as selling free drugs favors this practice, or that signs or symptoms, which are considered so slight that they do not deserve a medical consultation, for example (to ask for an appointment when someone has a headache).

In this study, the use of antibiotics does not appear in the first places, possibly due to the intense campaign that was coming true for the mass media on the prohibition to sell these drugs over-the-counter.

The obtained results of this study show-selling numbers of drugs without prescription/auto-prescription similar to other studies in Latin-American countries. In the same way, the problems of health and the drugs involve in this practice do not differ from previous studies on this theme.

In general, people goes to pharmacy when they consider that the problem of health is not grave, for lack of money, for lack of time or for lack of credibility in the system of health and/or the doctor. Therefore, they must centered the attention to the efforts towards the patients' education and the ethics of pharmacists in the use of selling free drugs, with the aim of optimizing the use of this valuable therapeutic resource.

## **Conclusions**



1. The responsible auto-medication can be used to prevent and treat the symptoms and illnesses that do not need medical consultation. This reduces the pressure on medical services, especially when these are limited, for those populations that live in rural or remote zones where access to medical services can be difficult.
2. It must exist training courses for patients for them to control their own ambulatory conditions from clinical symptoms that in some cases, they do not deserve a medical emergency service.
3. The non-medical personnel that expend drugs to Ecuadorian people, needs to receive a training about the clinical behave that can handle, outpatient, in a responsible and ethical way, being able to offer an efficient service, to decrease the adverse effects and drugs interactions, improving in this way, the service to the public.

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