

## **Factors that predispose self-medication in university students, a colombian case**

### **Factores que predisponen la automedicación en estudiantes universitarios, un caso colombiano.**

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#### **Abstract**

**Background:** Self-medication is a social practice that is becoming increasingly common in Colombia due to difficulties in healthcare access, long waits for appointments, or not enough time for users to visit their doctors or make checkup appointments. The aforementioned is reflected by the requests, claims and complaints received by the Superintendent of Health in Colombia during 2018, reaching near one million, 12% of which were due to the untimely availability of specialized medical appointments, and 6% are due to the untimely and delivery of medications. The untimely delivery of medications can lead to consequences such as self-medication along with its side effects, adverse reactions, occasional intoxications, and ineffectiveness due to their use in situations for which they are not indicated. For these reasons, this study explores cases among students from the Faculty of Health Sciences at the Universidad de Los Llanos.

**Methodology:** A descriptive cross-sectional study was conducted, and the information was gathered by surveying a group of 270 students. Sampling was done on a pro-rata basis, accounting for the number of students per semester, and study degree. This instrument was approved by health professionals who held masters-level educations. The survey included variables such as demographic data, health status, knowledge of medications, and self-medication culture.

**Results:** From the results obtained, 91% of the students are between ages 15 and 24, and 67% admitted self-medicated or used medications for ailments such as flu (67%), headache (60%), and fever (40%). The most used drugs included acetaminophen 90.1%, ibuprofen

49.7%, and 53.6% natural products, especially herbal infusions. Students stated they self-medicated because they did not have enough time to visit the doctor (42.5%).

**Conclusion:** This study found that students understood the concept of self-medication and still used medications without a prescription, and 39.6% (107/270) of the students self-medicated at least once a month.

**Keywords:** Self-medication, public health, Drug Utilization, health promotion, student health.

## **Resumen**

**Antecedentes:** La automedicación, es una práctica social que día a día aumenta en Colombia, debido a las dificultades de acceso a la Salud, consultas demoradas, falta de tiempo de los usuarios para asistir a las consultas y controles, como se refleja en las PQR (peticiones quejas y reclamos) presentadas a la superintendencia de salud en Colombia para el año 2018, a donde llegaron cerca de 1 millón, de las cuales se destacan el 12% por falta de oportunidad en la asignación de citas de consulta médica especializada, el 6% falta de oportunidad en la entrega de medicamentos. Esta falta de entrega de medicamentos puede traer como consecuencias la automedicación con sus problemas relacionados a efectos secundarios, reacciones adversas, en algún caso intoxicación y falta de efectividad al utilizarlos en situaciones no indicadas. Por lo anterior los autores identificaron las justificaciones para realizar esta práctica en los estudiantes de la Facultad Ciencias de la Salud de la Universidad de los Llanos.

**Metodología:** Se realizó un estudio descriptivo de corte transversal; la recolección de información se hizo a través de encuestas a una población de 270 estudiantes y el muestreo se hizo por prorratio teniendo en cuenta el número de estudiantes de grado por semestre y por carrera matriculados en los programas de la facultad Ciencias de la Salud de la Universidad de los Llanos. Este instrumento fue validado por profesionales de la salud con estudios de maestría, el cuestionario tiene variables como: datos demográficos, estado de salud, conocimiento de medicamentos y cultura de automedicación.

**Resultados:** Entre los resultados obtenidos se destacan que el 91% de los estudiantes tienen entre 15 a 24 años; el 67% admite haberse auto-medicado, usando medicamentos para dolencias como gripa (67%), cefalea (60%) y en estado febril (40%); dentro de los medicamentos más utilizados están: acetaminofén 90,1%, ibuprofeno 49,7% y un 53,6% utiliza productos naturales, de estos, se destacan las aromáticas. La razón principal que argumenta los estudiantes para auto-medicarse es falta de tiempo para asistir al médico 42,5%.

**Conclusión:** Se observó que los estudiantes comprenden el concepto de automedicación, consumen medicamentos sin prescripción médica. El 39.6% de los estudiantes se auto-medican al menos una vez al mes y lo hacen principalmente por falta de tiempo.

Palabras claves: Automedicación, Salud Pública, Utilización de Medicamentos, Promoción de la salud, Salud de los estudiantes.

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## **Introduction**

According to the World Health Organization (WHO), self-medicating is defined as the self-treatment of the signs and symptoms of people's diseases. Most people who self-medicate perform this practice either because of its economic and time-saving conveniences, friends and family influence, having sufficient knowledge about medicine, or simply because it was already prescribed before. All of those are cultural choices without accounting for the severe consequences that this can bring to their health (1). Even more concerning, self-medication is also due to its current widespread practice both among young people and adults (2). Because of this practice's consequences, studies on self-medication among university students reveal the need to intervene in such practice (3).

In Colombia, many medications can be obtained without a medical prescription, which makes self-medication easier (4). Evidence of the lack of initiatives to prevent this practice can be found with the WHO's call for the need to promote education on this issue (5, 6). This research aims to characterize self-medication practices among students from the Faculty of Health Sciences at the Universidad de Los Llanos.

## **Methodology**

A cross-sectional descriptive quantitative study was performed for this research. The study included 485 students from the Faculty of Health Sciences at the Universidad de Los Llanos, 68% of whom are nursing program students and, 32% study Pharmaceutical Technology. All of the students were in their second academic semester of 2019. The survey was applied to a sample of 270 undergraduate students from the Universidad de Los Llanos who were enrolled in those health sciences programs, all adults who agreed to participate in the study. The sample group was made on a pro-rata basis, and it accounted for the number of students per semester and degree of study.

The survey, created and given to participants, was approved by health professionals who held masters-level educations. For each of the survey's questions, the experts evaluated the wording clarity, internal consistency of the questions, whether the language was appropriate for the survey's participants, and whether it measured the research intentions. The survey consisted of 26 questions that addressed the following areas: demographic data, health status, knowledge of medicine, and self-medication culture. It also includes an informed consent form, signed by the participant students.

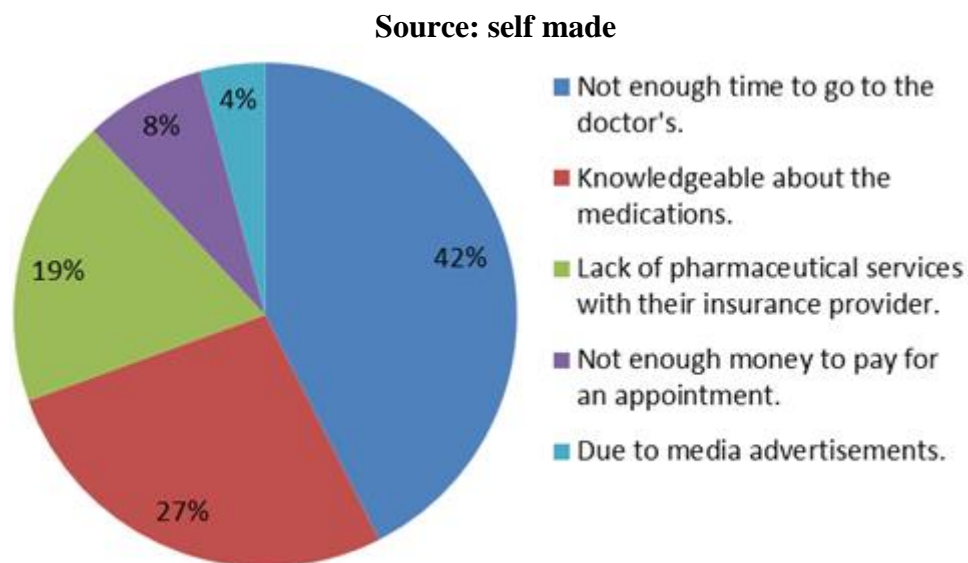
According to Resolution 8430 of 1993 of the Colombian Ministry of Health, the of this research's risk is classified as minimal since no interventions were performed (7) This research also adhered to the ethical principles suggested in the document, "International

ethical guidelines for biomedical research in human beings" created in 2002 by the Council of International Organizations of Medical Sciences (CIOMS) in collaboration with the World Health Organization (WHO), mainly regard for autonomy, which means that people can deliberate on their decisions, and they are treated with respect for their self-determination capacity" (8).

## Results

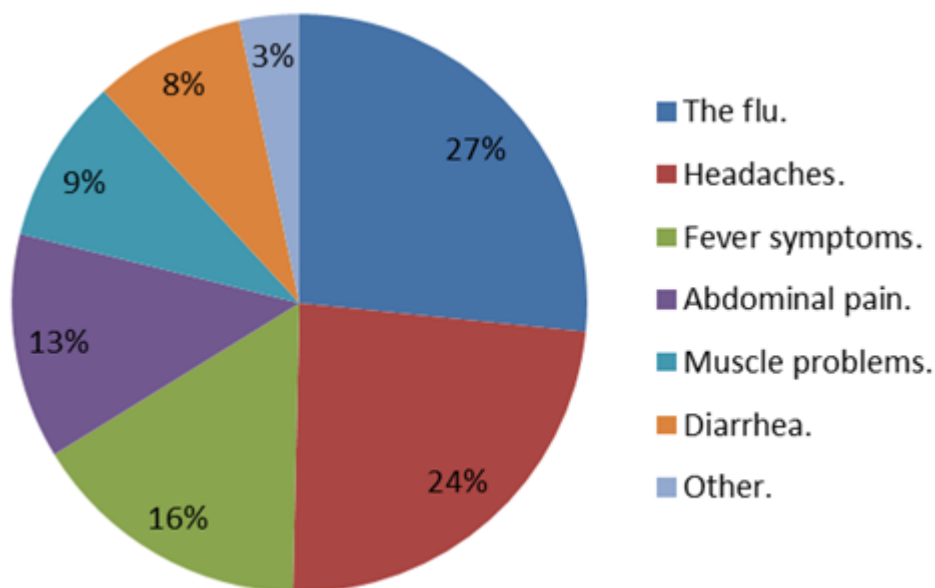
Although 95.9 % of participants understood the self-medication concept, 67% used medication without a medical prescription, and 39.6% of students self-medicated at least once a month.

Among the self-medicated group, 42.5% did so due to not having enough time to visit the doctor, while 26.5% of them justify self-medicating due to being knowledgeable about medicines (see Figure 1).



**Figure 1. Reasons why students from the Faculty of Health Sciences at the Universidad de los Llanos self-medicated (2017).**

**Source: self made**



**Figure 2. Most common diseases for which students from the Faculty of Health Sciences of the Universidad of Los Llanos self-medicated**

The study found among the self-medicated students when they have the flu, 43.6% used medicines that contain active substances such as analgesics, antihistamines, and decongestants, 25.4% used natural products, 16.6% used painkillers (common acetaminophen at 13.3%), and 3.9% used antibiotics, despite the disease being viral.

**Table 1. Diseases when Self-Medication it's used Vs. Most used medications by undergraduate students of the Faculty of Health Sciences of the Universidad de los Llanos. 2017.**

		Main diseases in self-medication									Frequency	Percentage
		Flu	Headache	Feverish state	abdominal pain	Muscle problems	Diarrhea	Nervous problems	Renal problems	hypertension		
Medicines used	Acetaminophen	103	81	79	9	1	0	0	0	0	273	42.1
	Natural	46	2	3	12	9	12	11	2	0	97	14.9
	Ibuprofen	6	66	5	8	5	0	0	0	0	90	13.9
	Hyoscine	0	1	0	36	0	0	0	0	0	37	5.7
	Loperamide	0	0	0	0	0	26	0	1	0	27	4.2
	Methocarbamol	0	0	0	0	19	0	0	0	0	19	2.9
	Naproxen	0	0	0	3	13	0	0	0	0	16	2.5

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	Oral rehydration solution	2	0	0	0	0	11	0	0	0	13	2.0
	Vitamins	5	0	0	0	5	0	0	0	0	10	1.5
	Others	19	8	2	14	8	9	2	1	4	67	10.3
Frequency		181	158	89	82	60	58	13	4	4	649	
Percentage		27.9	24.3	13.7	12.6	9.2	8.9	2.0	0.6	0.6		100.0

Students from the Faculty of Health Sciences at the Universidad of Los Llanos purchased medicines without a prescription at pharmacies in 80% of cases, while the remaining percentage purchased at local neighborhood mini-stores. Students reported that the most widely used medication advertisements they refer to are found the information and communication technology through the internet, 52.6%. Lastly, 54.8% of students reported they generally read the medication insert.

## Discussion

Regarding the concept of self-medication, it was found that a high percentage of the participants understood the concept (95.9%), and 67% acknowledged that they self-medicated, a figure that is less than a study conducted in Mexico in which 100% of the participants acknowledged engaging in this practice (9, 10). This high self-medication rate was largely due to the media's influence, which strategized to provide incentives to use medications despite legal limitations. Moreover, the internet is often used as a primary source of information without its content being verified (11, 12).

Students from the Faculty of Health Sciences at the Universidad de Los Llanos self-medicated more when they have the flu (67%) or a headache (60%). This was consistent with studies conducted in Colombia and Costa Rica (2, 3), where it was found that the symptoms for which students self-medicated most were headaches, flu conditions, and sore throats. In Colombia, drugs used for these conditions are characterized by being over-the-counter. However, the students from this study also medicated themselves when they had muscle aches and diarrhea, without knowing the consequences of this practice. Arguing they were medical students, they consider themselves knowledgeable about diseases, giving them the confidence to self-medicate (through a decision of their own or under the influence of a third party) often without a thorough pathology analysis (13).

Students from Universidad de Los Llanos obtained medications without a prescription from pharmacies (80%). This is consistent with Portilla A. research, 2017, in which 78.2% of the

student population also obtained their medications from pharmacies (13, 14). In contrast, in Argentina, 67% of medications were purchased in pharmacies (15). It is important to remark that among students from the health care field and from different cultures (Argentina and Columbia), their primary choice to purchase medications was pharmacies. These establishments are known for their ease of sale as they do not require a prescription.

## **Conclusion**

Students from the Faculty of Health Sciences at the Universidad de Los Llanos were found to understand the concept of self-medication. However, 67% of them took medications without a prescription, and 39.6% of students self-medicated at least once a month, demonstrating the need to intervene in this practice.

Additionally, 42.5% of students who self-medicated did so because they did not have enough time to go to their doctor's, and 26.5% of students justified self-medication because they were knowledgeable about the medications. These statistics explain this trend of self-medicating and ignoring the consequences of this practice.

## **Conflict of interest**

The authors declare they do not have any conflict of interest nor have received financial support from any pharmaceutical laboratory.

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### **Authors' Contribution**

GACR: Developed survey and validation tool, and gathered and analyzed information.  
MRGB: Developed survey and validation tool, and gathered and analyzed information.  
YAM: Developed survey and validation tool, and gathered and analyzed information. All participated in the writing of this text.