

Knowledge and attitudes of patients towards self-medication with macrolide antibiotics

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Abstract

The research aimed to: Establish a connection between the level of knowledge and behavior against self-medication with macrolide-type antibiotics in patients. A non-experimental, cross-sectional, descriptive and correlative study was carried out with a basic deductive research design of 600 participants, an observational model and a population that differs from the sample. The survey technique was used to collect data on the level of knowledge and attitude towards self-medication, applying the Likert and Dichotomous scale. A statistical procedure was used, creation of contingency tables, bar graphs, analysis and interpretation. Applying Spearman's correlation coefficient whose value for validation, $r_s = 0.504$, shows a high positive correlation. Determining p value = 0.

Keywords: self-medication, level of knowledge, attitude.

INTRODUCTION

The world is experiencing a pandemic context due to COVID-19, which has led to an increase in the practice of "self-medication" in many countries, defined as the use of medications without first consulting a medical professional and obtaining a prescription. It is being managed as a public health emergency due to the potential for its spread around the world and its impact on all societies. The prevalence of drug use that is not managed by law enforcement is also higher in developing countries.¹

80% of Mexicans use pharmaceutical products independently, without visiting a doctor and often without a prescription, a problem already reported by the WHO. Self-medication is "the selection and use of medications by citizens for the treatment of diseases without a prior diagnostic study, which leads to resistance to drugs, which act against one or more types of microorganisms, without knowing the degree of toxicity it causes to humans".²

In contrast, antibiotic resistance is a serious problem in the United States, and that has public health professionals concerned that we may be returning to a time when even small infections can be deadly. This is due to the fact that when people are not aware of the best available therapies, it encourages the growth of a resistance mechanism.³

The public sector at national, regional and global levels should take note of the alarmingly high rates of mortality and morbidity due to antibiotic resistance caused by self-medication. Negative social and economic effects. Antibiotic use was found to be a contributing factor in 69.2% of self-medication cases, as determined by statistical analysis.⁴

Researchers have been trying to find ways to use antibiotics to decrease mortality and vulnerability for more than a hundred years. However, antibiotic resistance has emerged, making it difficult for clinicians to treat disease using their knowledge and experience to provide patients with the best possible outcomes.⁵

When administered incorrectly, antimicrobial drugs used to treat diseases in humans, animals, and plants can lose some of their

effectiveness. That's why we formed the One Health committee to implement a comprehensive plan to combat antibiotic resistance across the country. DIGEMID was responsible for everything.⁶

Therefore, WHO and PAHO have taken a strong stance on the issue of people self-medicating with antibiotics and other medications, advocating for the appropriate use of such medications among the general population. This is particularly important because doctors' offices and pharmacies are seen as front-line medical facilities, where people go for help with any type of symptom or annoyance; therefore, their staff must be adequately trained to deal with such a large number of patients.⁷

According to a survey conducted by (INEI) on the purchase of medicines in Peru in 2014, 52.3% of those surveyed obtained their medicine without a prescription. When asked if they had a prescription, 47.7% did; however, only 28.5% produced their doctor's note and 19.2% did not, implying that pharmacists and physician assistants are not properly dispensing prescriptions.⁸

Most people who self-medicate do so with over-the-counter pharmaceuticals, but it's vital to remember that many also abuse prescription drugs without a prescription. This leads to illegitimate drug use, which in turn could have harmful effects. Medications including antacids, pain relievers, anti-inflammatory medications, and antibiotics are frequently abused.⁹

People may resort to self-medication with pharmaceuticals due to exposure to inappropriate drug advertising, unethical profits from pharmaceutical companies seeking to sell more of their product, a dearth of affordable healthcare options, occupational stress, and a shortage of facilities of medical care. Therefore, constant vigilance is required because it is a critically important issue for public health.¹⁰

The WHO agrees that more expensive second-line drugs should be considered if first-line antibiotics do not work. With a chronic illness and lengthy hospital visits, medical costs add up quickly, putting a strain on family finances. Adolescents with drug resistance experience additional financial hardship due to the higher cost of treatment caused by the long-term nature of their condition, the need for additional diagnostic procedures, and the use of more powerful but more expensive drugs.¹¹

In particular, our country is not immune to the fact that the COVID-19 pandemic severely weakened the health system. To combat the deadly disease when most people's understanding was limited, we resorted to self-medication, visiting boticas (pharmacies) and pharmacies (primary-level pharmacies).¹²

Theoretically, we want to find out if there is a connection between people's level of education and their propensity to self-medicate with macrolide antibiotics. The research is defended on the basis of its practical value because the end result is supposed to warn patients about the dangers of ignorant self-medication and the development of antibiotic resistance. Similarly, the efficiency of the pharmacy technician's time and effort is essential within the pharmacy and its customers. To put it more technically, the study is justified as the information collected will help people improve their understanding and approach to self-medication, thereby increasing the likelihood that the stated goals of the study will be met.

MATERIALS AND METHODS

Design of the investigation

Because research analysis is fundamental, summarizing and presenting the observable world starts from this premise. Fundamental or foundational research focuses on discovering laws and principles for theoretical and scientific reasons.¹³ Applying scientific theories to the study of variables. This study does not change the independent factors. Kerlinger (1979, p.116),¹⁴ describes a cross-sectional study as an observational investigation focused on individuals that meets both descriptive and analytical objectives. Prevalence studies are cross-sectional surveys. This study aims to assess the prevalence of the disease in the research population. This design, along with case-control and cohort designs, is a cornerstone of epidemiology since the variables were not planned for.¹⁵ Longitudinal and cross-sectional data were collected over a month. Because you couldn't consistently modify the variables, the results were returned in their natural context. This technique proposes an uncontrolled investigation.¹⁶

The suggested research is both descriptive and correlative. It is said to be descriptive as it is used to discover new facts and study meaning. It is an analytical procedure in which extensive research contributes to data collection and lays the foundation for quantitative analysis.¹⁷ Correlational is the mathematical method of measuring two variables and using the correlation

coefficient to calculate the statistical link between the variables. This study examines how closely two variables are related.¹⁸

Study Population

This research was carried out in a number of contexts. Around 600 samples were obtained from patients in the apothecaries of South Lima, Peru (420 men and 380 women). The ages of the participants ranged from 44.28 ± 1.24 years. Each patient completed routine data collection procedures.

Statistical Analysis

Using descriptive and inferential statistics, a dataset was constructed in the Spanish edition of SPSS to evaluate sample collection. Using descriptive statistics, the study findings were extracted from the numerical data. To accurately illustrate the study process, we must collect, categorize, characterize, summarize, and present the material. Inferential statistics allowed hypotheses to be investigated and data to be evaluated to derive sound scientific conclusions. Since the study variable collection techniques included discrete value quality metrics, Spearman's correlation was used to check whether the point cloud fitted the regression line within 0.005% error.

RESULTS

Table N°1 Frequency of Level of knowledge of macrolide antibiotics and Attitude towards self-medication with antibiotics

Attitude towards self-medication with antibiotics						Total
			Bad	Good	Excellent	
LEVEL OF KNOWLEDGE OF ANTIBIOTICSMACROLIDES	Bass	Count	80	100	120	300
		% of the total	11.1%	13.9%	25.0%	50.0%
	Tall	Count	0	130	170	300
		% of the total	0.0%	2.8%	47.2%	50.0%
Total		Count	80	230	290	600
		% of the total	11.1%	16.7%	72.2%	100.0%

As shown in Table 1, 11.1% of the patients surveyed estimate that the level of knowledge of macrolide antibiotics and the attitude towards self-medication with antibiotics is poor. Likewise, 2.8% consider that the level of knowledge is good and only 47.2% showed that the level of knowledge was excellent.

Table N°2 Correlation test of level of knowledge of antibiotics, macrolides and attitude towards self-medication with antibiotics

LEVEL OF KNOWLEDGE OF ANTIBIOTICS MACROLIDES				attitude towards the self-medication with antibiotics	
rh of spearman	LEVEL OF KNOWLEDGE OF	Coefficient of	1,000	.504**	

	ANTIBIOTICS	correlation		
	MACROLIDES			
		Next (2-sided)	.	.002
		N	600	600
	Attitude towards self-medication with antibiotics	Coefficient correlation	.504**	1,000
		Next (2-sided)	.002	.
		N	600	600
**. The correlation is significant at the 0.01 level (bilateral).				

According to table No. 2, a Rho correlation test of

Spearman (0.504), with a corresponding sample of a p value = 0.002 < 0.05, therefore, resulted in the support of the alternative hypothesis, that is, a corresponding similarity is found between the level of knowledge of macrolide antibiotics and attitude towards to self-medication with antibiotics.

DISCUSSION

According to the tables, it shows a substantial connection (0.504) between knowledge of macrolide antibiotics and self-medication. 11.1% of those surveyed did not know much about macrolide antibiotics and did not like self-medication. 2.8% say that their knowledge is good; 47.2% say it is excellent. Likewise, it reveals a moderate value of Spearman's rho (0.687) and p value (0.005). This is antibiotic knowledge and self-medication mentality. 38.9% of those surveyed believe they know a lot about antibiotics and self-medication. 11.1% do not know much, while 2.8% do. We agree with "Degree of knowledge of the antibiotic prescribed in outpatients", which has no research on the administration of antimicrobials.

These results are comparable to those of Vera-Romero, O; Urcia-Pelaez, J; Ayala-Bravo, E; Saints, B; Díaz, in which the economic factor (not paying the visit to the doctor) represented 30% of the reasons for self-medication and minor symptoms that did not require a visit to the doctor represented 28%. Some minor symptoms, such as fever (53%) and pain (83%), are followed by moderate to severe symptoms, such as infections (49%) or diarrhea (21.2%). Women who self-medicate are at risk of taking the morning-after tablet and clindamycin.

CONCLUSIONS

We can conclude that the results show a bilateral margin of error of 0.002 at the significance level of 0.05 in the study, where there is a large, positive and statistically significant association between knowledge and attitude towards self-medication with macrolide antibiotics in the patients.

REFERENCES

1. Maita-Cruz YM, Flores-Sotelo WS, Maita-Cruz YA, Cotrina-Aliaga JC. Artificial intelligence in public management in times of Covid-19. *Rev Ciencias Sociales* 2022;28(SPECIAL 5):331-340.
2. Alsadi J, Ismail RMA, Trrad I, Singh P, Potrich E, Cotrina-Aliaga JC. Effect of Processing Optimization on the Dispersion of Polycarbonate Red Dye on Compounded Plastics. *Mater Sci Forum* 2022;1068:129-138.
3. Cotrina Aliaga JC, Vera Flores MA, Sosa Celi P, Espinoza Cordero T. Use of digital tools in the first level of care against COVID-19. *Agora* [Internet]. 2021 Jul 12 [cited 2022 Sep 6];8(1):29-33. Available in: <https://revistaagora.com/index.php/cieUMA/article/view/139>

4. Zevallos Escobar LE, Borja Villanueva CA, Vásquez Corales É, Palacios Palacios MI, Vílchez Reyes MA. FACTORS RELATED TO SELF-MEDICATION IN HEALTH SCIENCES STUDENTS. *Univ Soc* 2022;14(4):460-468.
5. Majeed AA, Hassan LA, Khalfa HM. The assessment of Cyclophosphamide Chemotherapy Effect Loading-PLGA Nanoparticles Against Ovarian Cancer Cells Line (OVCAR-4 and PEO1). *J Pharm Negat Results* 2022;13(1):39-43.
6. Majid, M.A., Abbas, WAK, & Waheed, H.J. (2022). Studying the impact of plasminogen activator inhibitor -1 and some biochemical parameters in iraqi children with type -1 diabetes mellitus. *Journal of Pharmaceutical Negative Results*, 13(1), 35-38. doi:10.47750/pnr.2022.13.01.007
7. Setiyowati E, Agustina AN, Yuddha AS, Muchtar M, Fatmawati E, Andiyan A. Self-Management to Change of Perception and Clinical and Pharmacological Knowledge of COVID-19. *J Pharm Negat Results* 2022;13(2):1-6.
8. Alfraih, M., and Alanezi, S. Accounting students' perceptions of effective faculty attributes. *Journal of International Education in Business*, 2016;9(2):123-142.
9. Alsabawy, A., Cater-Steel, A., and Soar, J. Determinants of perceived usefulness of e-learning systems. *Computers in Human Behavior*, 2016; 64: 843–858.
10. Choi J, Ju I, Huh E, Noh D, Gu P, Oh M. Effects of indoxyl sulfate on dopaminergic neurons and motor functions. *J Pharm Negat Results* 2020;11(1):30-34.
11. Lifshitz A, Arrieta O, Burgos R, Campillo C, Celis MÁ, de la Llata M, et al. Self-medication and self-prescription. *Gac MedMex* 2020;156(6):612-614.
12. Alfaro-Mora R, Monge-Guerrero A, Jerez-Zamora MF, Campos-Campos P, Pérez-Mora F. Characteristics of the university population who resorts self-medication in Costa Rica. *Vitae* 2020;27(3):1-11.
13. Pérez SIA, Calderón MM, Garay OG, Mojica DU, Cárdenas YD. Self medication prevalence in children who consult for respiratory tract diseases and acute diarrheal disease at Clínica Universidad de la Sabana. *Uninorte Health* 2020;36(1):46-61.
14. Tiwari S, Gehlot S, Tiwari SK, Singh G. Effect of walking (aerobic isotonic exercise) on physiological variants with special reference to Prameha (diabetes mellitus) as per Prakriti. *Ayu*. 2012;33(1):44-9.
15. Rapolu SB, Kumar M, Singh G, Patwardhan K. Physiological variations in the autonomic responses may be related to the constitutional types defined in Ayurveda. *J Humanitas Med*.2015;5:e7.
16. Travis FT, Wallace RK. Dosha brain-types: A neural model of individual differences. *J Ayurveda Integr Med*. 2015;6(4):280-5.
17. Ram Manohar P, Sorokin O, Chacko J, Nampoothiri V. An exploratory clinical study to determine the utility of heart rate variability analysis in the assessment of dosha imbalance. *J Ayurveda Integr Med*. 2018 Apr-Jun;9(2):126-30
18. Rastogi S. Building bridges between Ayurveda and Modern Science. *Int J Ayurveda Res*.2010;1(1):41–6.