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SELF-MEDICATION IN CHILDREN WITH DISEASES OF THE UPPER RESPIRATORY TRACT IN A MOTHER-CHILD CENTER IN PERU

AUTOMEDICACIÓN EN NIÑOS CON ENFERMEDADES DE VÍAS RESPIRATORIAS ALTAS EN UN CENTRO MATERNO INFANTIL EN PERÚ

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ABSTRACT

Introduction: Self-medication is a common practice to alleviate symptoms of various diseases, in the child population such as pharyngitis and rhinopharyngitis that are common in health centers in Peru. **Objective:** To determine the factors associated with self-medication in children with upper respiratory tract diseases. **Methods:** Analytical cross-sectional observational study. The sample size was 206 parents who went with their children to the Emergency service. A questionnaire approved by Valenzuela M was used. and the SPSS program to find the frequency, the bivariate analysis and the multivariate analysis of Poisson logistic regression. **Results:** The prevalence of self-medication in children was 91,3%. Parents who only studied primary and secondary school were more likely to self-medicate their children PRa=1,22 (95% CI: 1,01-1,40). the first-born were protected from self-medication PRa=0,86 (95% CI: 0,76-0,97). Parents who were between 20 and 29 years of age obtained PRa=1,04 (95% CI: 0,96-1,13), children under 7 years old, PRa=0,99 (95% CI: 0,91-1,07) and parents of family that had 1 child PRa=1,04 (95% CI:0,90-1,20). **Conclusions:** The educational level and the order number of the child, such as being the first-born, had a significant association with self-medication in children.

Keywords: Self medication; Epidemiologic Factors; Respiratory Tract Diseases; Child. (Source: MESH-NLM)

RESUMEN

Introducción: La automedicación es una práctica común para aliviar síntomas de diversas enfermedades, en la población infantil como la faringoamigdalitis y la rinofaringitis que son comunes en los centros de salud del Perú. **Objetivo:** Determinar los factores asociados a la automedicación en niños con enfermedades de vías respiratorias altas. **Métodos:** Estudio observacional transversal analítico. El tamaño muestral fue de 206 padres de familia que acudieron con sus hijos al servicio de Emergencia. Se utilizó un cuestionario aprobado por Valenzuela M. y el programa SPSS para hallar la frecuencia, análisis bivariado y análisis multivariado regresión logística de Poisson. **Resultados:** La prevalencia de automedicación en niños fue de 91,3%. Los padres que solo estudiaron primaria y secundaria tuvieron mayor probabilidad de automedicar a sus hijos RPa=1,22 (IC 95%: 1,01-1,40). Los primogénitos estuvieron protegidos ante la automedicación RPa=0,86 (IC 95% :0,76-0,97). Los padres que tenían un rango de edad entre 20 a 29 años obtuvieron RPa=1,04 (IC 95%: 0,96-1,13), los niños menores de 7 años, RPa=0,99 (IC 95%: 0,91-1,07) y los padres de familia que tenían 1 hijo RPa=1,04 (IC 95%:0,90-1,20). **Conclusiones:** El nivel educativo y el número de orden del hijo como ser el primogénito tuvieron asociación significativa con la automedicación en niños.

Palabras clave: Automedicación; Factores Epidemiológicos; Enfermedades respiratorias; Niño. (Fuente: DeCS-BIREME)

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INTRODUCTION

Currently, self-medication has been considered a method to accelerate the healing of certain diseases without the prescription of a doctor. The World Health Organization (WHO) mentions that despite several countries having regulations prohibiting the sale of medicines without a medical prescription, there is an 80% chance of obtaining them. This practice has become a bad habit in adults that is even replicated towards their children. Therefore, it is called self-medication by power, being more prevalent in the pediatric population, to treat mostly acute respiratory infections [1,2].

It should be noted that the administration of medications without a doctor's indication can generate several consequences such as the self-prescription of antibiotics, whose misuse would cause resistance in bacterial infections, and incorrect dosing causing adverse reactions. Also, it should be noted that the majority of respiratory infections are viral, so the use of multiple medications is unnecessary [3-4].

At the sociodemographic level, several factors could be associated with parents self-medicating their children, such as the socioeconomic level, age, education level of the head of the family, proximity to health centers, among others. In Spain, a study was conducted in the Emergency Service of a pediatric hospital, which found that having many children, mothers with primary education, and being the third sibling have a significant association with self-medication towards their children. [5,6]. Some developing countries such as Turkey and Pakistan have found studies showing a high prevalence of self-medication in children with 63.5% and 77.25% respectively. However, in developed countries such as Spain, it has a lower prevalence of 32.8%. [5,7,8].

On the other hand, studies have been found on the consequences of self-medication in children. In Congo, it was shown that 95.7% of mothers did not know how to give the correct dosage, and 55.1% would go to a hospital in case of sequel. Another study conducted in Ecuador showed that 79% of pediatric patients who self-medicated ended up in worse health condition, and 9.8% had a delay in reaching the diagnosis [9,10].

In Peru, it was reported that acute respiratory infections in health centers affect the pediatric age group more, with rhinopharyngitis and pharyngotonsillitis being more prevalent. These diseases are mostly upper respiratory tract infections, where depending on the disease, it is usually viral or bacterial. Therefore, it is important to have treatment supervised by a doctor who, under the clinical evaluation of the patient, will determine the possible etiological agent [11-13].

Also, self-medication in the Peruvian population varies from 40% to 60%. According to MINSA, self-medication hinders the correct diagnosis of diseases. It should be noted that the most common respiratory infections such as rhinopharyngitis and pharyngotonsillitis have a higher predisposition for the drugs used in their treatment to be acquired without a medical prescription. In a study conducted in the city of Chiclayo, Lambayeque, a prevalence of 70.7% of mothers, who self-medicated their children with antibiotics to relieve respiratory symptoms among the most frequent: fever and sore throat, was observed [14-16].

For this reason, the present study seeks to find the factors associated with self-medication in children with upper respiratory tract diseases at the Centro Materno Infantil Buenos Aires de Villa, Chorrillos, during the period from November 2022 to March 2023. This will allow us to understand how the behavior of self-medication in parents has evolved, to develop better management to decrease it.

METHODS

Design and Study Area

This is an observational, cross-sectional, analytical study conducted on parents of Centro Materno Infantil, Buenos Aires de Villa in Peru, from November 2022 to March 2023.

Population and sample

A convenience non-probabilistic sampling was performed, where a sample of 206 parents was selected, with each element chosen at the discretion of the investigator.

The calculation of the sample size was determined by considering the following values: the frequency with the factor p1=0.7 and the frequency without the factor p2=0.5 of the age variable in relation to self-medication, according to the study by Simon B et al.[6] with a 95% confidence level and a statistical power of 80%.

Parents who made up the required sample number were surveyed, who went to the emergency service to care for their children and met the following inclusion criteria: being parents of children with rhinpharyngitis and pharyngitis, children under 14 who agreed to participate in the study. Participants who did not fill out the questionnaire correctly and indirect family members who came with the children were excluded.

Variables and Instruments

The validated survey created by Valenzuela M. et al.[5] was used for data collection of the dependent variable, self-medication, and independent variables, such as the educational level of the parent, parent's age, child's age, birth order, and number of children. The measurement of the variables was performed by dichotomizing each variable such as the educational level of the parent (primary/secondary and higher education), parent's age (20 to 29 and 30 to 55 years), child's age (under 7 years and 7 to 13 years), birth order of the child (first and second or more), and number of children (one child and two or more children).

Statistical Analysis

Descriptive analysis of the data was performed using frequency tables and percentages. Bivariate and multivariate Poisson regression analysis was applied to determine the association between parent's age, educational level of the parent, number of children, child's age, birth order, and self-medication. The crude prevalence ratio (CPR) and adjusted prevalence ratio (APR) were calculated with a 95% confidence level and statistical significance $p<0,05$.

Ethical Considerations

The present study was approved by the Research Ethics Committee of the Faculty of Human Medicine at Universidad Ricardo Palma reflected in the PG minutes 046 - 2022 minutes (approved on December 6, 2022). The Declaration of Helsinki was also taken into account, and authorization was obtained from the Head of the Centro Materno Infantil Buenos Aires de Villa, Chorrillos. Also, informed consent was obtained from all participants before applying the survey.

RESULTS

A total of 206 parents participated in the present study, of which 188 (91.3%) self-medicated their children, mostly females (91.5%).

Table 1 shows that the majority of the parents, 112 (59.2%), were aged between 30 and 55 years, while 4 (40.8%) were outside this range. Furthermore, most of them had only one child, making a total of 114 (55.3%). In terms of educational level, the majority had completed primary and secondary education, totaling 148 (71.8%). On the other hand, most of the children were under 7 years old, corresponding to a total of 112 (54.4%). The majority of the children were first-born, making a total of 149 (71.8%).

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Table 1. Characteristics of the epidemiological factors of the parent and child.

Epidemiological factors of the parent	n	%
Parent's age		
20 to 29 years	84	40.8
30 to 55 years	122	59.2
Number of children		
1 child	114	55.3
2 or more children	92	44.7
Educational level		
Primary/Secondary	148	71.8
Higher education	58	28.2
Epidemiological factors of the child		
Child's age		
Under 7 years old	112	54.4
7 to 13 years old	94	45.6
Birth order of the child		
First	149	71.8
Second or more	57	28.2

Table 2 shows that the birth order of the child has a p=0.006 and the parent's level of education has a p<0.001. According to the bivariate analysis, being the firstborn child had an adjusted prevalence ratio (APR) of 0.88 (95% CI: 0.83-0.93). Regarding the parent's level of education, those who completed primary and secondary education had an APR=25 (95% CI: 1.08-1.44) compared to those who completed higher education.

Table 2. Bivariate analysis of epidemiological factors associated with self-medication in children.

Epidemiological Factors	AUTOMEDICACIÓN					
	Yes n(%)	No n(%)	P value*	Crude PR	CI 95%	P value**
Parent's age						
20 to 29 years	80 (95.2%)	4 (4.8%)		1.08	0.99-1.17	0.073
30 to 55 years	108 (88.5%)	14 (11.5%)	0.094	Ref.	Ref.	Ref.
Child's age						
Under 7 years	85 (90.4%)	9(9.6%)		1.02	0.93-1.11	0.699
From 7 to 14 years	103(92.0%)	9(8.0%)	0.697	Ref.		Ref.
Number of children						
1 child	102 (89.5%)	12 (10.5%)		0.96	0.88-1.04	0.301
2 or more children	86(92.8%)	6 (7.2%)	0.312	Ref.	Ref.	Ref
Birth order						
First	131(87.9%)	18(12.1%)		0.88	0.83-0.93	<0.001
Second or more	57(100%)	0(0%)	0.006	Ref.	Ref.	Ref.
Parent's Education Level						
Primary/Secondary	143(96.6%)	5(3.4%)		1.25	1.08-1.44	0.002
Higher Education	45(77.6%)	13(22.4%)	<0.001	Ref.	Ref.	Ref.

*p value < 0.05, chi-square, **p value < 0.05, Poisson logistic regression PR: Prevalence Ratio, CI: Confidence Interval

In Table 3, in the multivariate analysis, after adjusting for the variables, it was observed that according to the birth order, first-born children had an APR=0.86 (95% CI: 0.76-0.97). According to the education level, parents who had completed primary or secondary education had an APR=1.22 (95% CI: 1.01-1.40).

Table 3. Multivariate analysis of epidemiological factors associated with self-medication in children.

Epidemiological Factors	SELF-MEDICATION		
	Adjusted PR	CI 95%	P value
Parent's Age			
20 to 29 years	1.04	0.96-1.13	0.344
30 to 55 years	Ref.	Ref.	Ref.
Child's Age			
Under 7 years	0.99	0.91-1.07	0.743
7 to 14 years	Ref.	Ref.	Ref.
Number of Children			
1 child	1.04	0.90-1.20	0.589

2 or more children	Ref.	Ref.	Ref.
Birth order			
First	0.86	0.76-0.97	0.015
Second or more	Ref.	Ref.	Ref.
Parent's Education Level			
Primary/Secondary	1.22	1.01-1.40	0.004
Higher Education	Ref.	Ref.	Ref.

*p value <0.05 Poisson logarithmic regression, PR: Prevalence Ratio, CI: Confidence Interval.

DISCUSSION

The present study analyzed the factors associated with self-medication in children with upper respiratory tract diseases at the Centro Materno Infantil Buenos Aires de Villa, Chorrillos. It was determined that 91.3% of parents self-medicated their children, mostly female. Furthermore, epidemiological variables such as educational level and birth order were statistically significant.

Regarding the prevalence of self-medication in children, it stands out at 91.3%. This result reflects an increase compared to the last national study by Brenis C. et al. [14], who conducted an analytical cross-sectional study, where a prevalence of 70% was reported. International studies showed a lower prevalence of self-medication in children, including Valenzuela M. et al.[5] in Spain with a result of 32.8%, as well as the study by Abiodun M. et al.[17] in Nigeria with 25.5%, Cruz J. et al.[18] in Colombia with 25%, Yuan J. et al. [19] in China with 24.21%, and Mukattash T. et al.[20] in Jordan with 39.2%.

Regarding educational level, parents who studied primary and secondary education were 1.22 times more likely to self-medicate their children compared to those with higher education, with an APR=1.22 (95% CI: 1.01-1.40), showing a significant association with self-medication. This finding coincides with the study by Mukattash T. et al.[20], which showed that parents with lower education were more likely to self-medicate their children. Likewise, the study by Alonso A. et al. [21] in Mexico highlighted that parents with a middle educational level, equivalent to secondary education in our country, are more likely to self-medicate their children. Additionally, the study by Cruz J. et al.[18] showed that parents with higher education have a lower likelihood of self-medicating their children. According to the birth order, first-born children showed a significant association with self-medication, being a protective factor.

This finding coincides with the study by Valenzuela M. et al.[5], which shows that children born second or later are more likely to be self-medicated by their parents.

Regarding the age of the parent, the present study did not show a significant association with self-medication. This result is similar to the national study by Ojeda A.[22], although in his study, only mothers aged 18 to 70 years participated, while in our research, parents of both sexes participated. Likewise, international studies such as Abiodun M. et al.[17] in Nigeria, Ukwishaka J. et al.[23] in Rwanda, and Yuan J. et al. [19] in China did not show a significant association. In contrast, the study by Alonso A. et al.[21] in Mexico showed that parents over 35 years old are more likely to self-medicate their children, and the study by Mukattash T. et al.[20] in Jordan demonstrated that parents over 50 years old are more likely to self-medicate their children.

With respect to the age of the child, the present study did not find a significant association with self-medication. This finding is consistent with the results obtained by Simon B, et al.[6] in Tanzania and Yuan J, et al. [19] in China. In contrast, the study by Agudelo S. et al.[2] in Colombia showed that children aged 6 to 15 years are more likely to be self-medicated by their parents.

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Regarding the number of children, the present study did not find a significant association with self-medication. This finding is consistent with the study by Brenis C. et al. [14]. In contrast, Valenzuela M, et al. [5] showed that parents with more than one child are more likely to self-medicate their children. Similarly, Alonso A, et al.[21] in Mexico, Ukwishaka J, et al.[23] in Rwanda, and Mukattash T, et al.[20] in Jordan found similar results. The limitation of the present study was during data collection, as some parents did not have the availability of time to respond to the survey since the study was conducted in an Emergency Department.

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