

# PREVALENCE OF SELF-MEDICATION AMONG SCHOOL ADOLESCENTS AGED FROM 15 TO 19 YEARS

## PREVALÊNCIA DE AUTOMEDICAÇÃO ENTRE ADOLESCENTES ESCOLARES DE 15 A 19 ANOS

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### ABSTRACT

**Introduction:** Studies focused on adolescents showed that they often practice self-medication; thus, the extent of this practice must be clarified. **Objectives:** To assess the prevalence of self-medication among school adolescents. **Methods:** This cross-sectional study was integrated with the “Study of oral and psychosocial health conditions among 15- to 19-year-old students in the municipality of São Lourenço da Mata - Pernambuco”, the original study that was considered a baseline for a cohort with a primary data source. The study included adolescents enrolled in public schools. **Results:** A high percentage of adolescents practiced self-medication (64.7%). **Conclusion:** Self-medication was common among the population studied.

**Keywords:** Self-medication; Adolescents; Risk factors

### RESUMO

**Introdução:** Estudos voltados para a população adolescente demonstram que a automedicação nesta faixa etária é frequente, sendo necessário conhecer em que medida estes indivíduos estão sujeitos a esta prática. **Objetivo:** Avaliar a prevalência da automedicação entre adolescentes em idade escolar. **Métodos:** Trata-se de um estudo de corte transversal, que se encontra integrada ao “Levantamento das condições de saúde bucal e psicossocial dos escolares de 15 a 19 anos do Município de São Lourenço da Mata – PE”, sendo o estudo de origem um estudo de base para uma coorte com fonte de dados primários. A pesquisa foi realizada nas escolas públicas e incluídos os adolescentes de 15 a 19 anos, matriculados em escolas da rede pública de São Lourenço da Mata. **Resultados:** Os resultados apontam que um grande percentual da população adolescente local pratica a automedicação (64,7%). **Conclusão:** Pode-se concluir que a prática da automedicação é comum entre os adolescentes estudados.

**Palavras-chave:** Automedicação. Adolescente. Fatores de risco.

### INTRODUCTION

Medication is an intervention accepted and used worldwide, recognized for its significant importance in health actions, and often plays a central role in current therapeutics. However, its use is not free of risks and may also be abused, causing as much harm as those caused by several drugs of licit or illicit use, such as dependence, withdrawal syndrome, and behavioral disorders.

Despite negative episodes, the relative “safety” offered by medication stimulates an immediate search for health through its common acquisition and use. This problem, according to Lefèvre (1987)<sup>1</sup>, tends to confound the social, behavioral, cultural, and psychological determinants of diseases. Thus, in the context of a frequently unsatisfactory health system, the function of medication presupposes that diseases

are organic phenomena that may be solved using medication as a scientifically valid way of obtaining health, a highly desired value.

The pursuit of immediate health has increased rates of adverse effects associated with the inappropriate or unnecessary use of medications (or both). Therefore, economic, political, and cultural factors have contributed to the rise and disclosure of inappropriate medication use in Brazil and worldwide, characterizing it as a significant public health issue<sup>2</sup>.

Self-medication is among the contributing factors to this issue. The term refers to the practice of an individual (or their responsible) choosing a medication and its administration for symptomatic relief or the perceived “cure” of a health problem without medical evaluation<sup>3</sup>.

Therefore, self-medication represents the responsibility of the individual to improve their health and becomes problematic when it is generalized to all diseases<sup>3,4</sup>.

Considering self-medication as a widespread practice, studies have attempted to elucidate its causes and consequences<sup>2-4</sup>. They observed a high prevalence among adults but a more cautious practice in older adults and young children populations, for whom the fear of undesirable reactions is greater due to their fragility.

In this context, the extension of this behavior among adolescents raises concern. A study conducted in the cities of Limeira and Piracicaba (São Paulo, Brazil) confirmed that children and adolescents often practice self-medication. The study reported that 56.6% of the adolescents interviewed had used medications in the 15 days preceding the study<sup>4</sup>.

Understanding the mechanisms of medication usage among adolescents is important to identify negative influences caused by inadequate information and cultural aspects, as well as to verify how socioeconomic and emotional factors may increase self-medication. Thus, this study aimed to estimate the prevalence of self-medication among school adolescents.

## METHODS

The study used data from the “Study of oral and psychosocial health conditions among 15- to 19-year-old students in the municipality of São Lourenço da Mata - Pernambuco” project. Developed in two stages, the project aimed to constitute a baseline for an adolescent cohort in a large urban center of the metropolitan region of Recife.

This cross-sectional study used primary data collection for a cohort investigation. This study design enabled the observation of the object of interest within the study population and the evaluation of its effects over time without influencing its course. The objective was to estimate the prevalence ratio of several oral health outcomes, and the prevalence of dental pain was used as a reference for the final sample calculation, estimated to be at 10% for this population according to local and regional studies.

According to the population census conducted by the Brazilian Institute of Geography and Statistics (IBGE) in 2011, the São Lourenço da Mata population (Pernambuco, Brazil) was estimated at

108,301 inhabitants, with an area of 264 km<sup>2</sup> and a population density above 100,000 inhabitants per km<sup>2</sup>. The municipality has a mean Human Development Index of 0.653 and a GDP per capita of R\$5,070.81 19.

Data provided by the Municipal Department of Education estimated that the public education system of São Lourenço da Mata has 49 municipal institutions (schools and daycare centers) and eight state schools.

Adolescents aged from 15 to 19 years (born between 1995 and 1999) of both genders enrolled in public state and municipal schools in the city of São Lourenço da Mata were evaluated. Data collection was conducted in 11 schools that had students within the age range, totaling 1,156 students, which represented 81.5% of the initially calculated sample. For sample calculation, the formula for comparing two proportions was used, a 1:1 ratio in the comparison groups, with a power of 80% to detect differences when presenting a random error of 2.5% and a 95% confidence interval.

Thus, based on a previously reported prevalence of self-medication among adolescents of 65.1%<sup>5</sup>, the sample was considered representative for estimating this practice in the target population.

The number of students from each school included in the sample was proportional to the number of students within the previously established age range of the respective school, setting a proportionality ratio. Adolescents were selected by sampling, starting with the first name on the list and alternating between a selected and a non-selected adolescent, excluding every twelfth selected name. This process resulted in the initial study sample.

Data quality control occurred by repeating the clinical examinations and questionnaires for every ten students. The results showed an acceptable degree of agreement for the questionnaire retest analyses ( $r > 0.8$ ) and a satisfactory degree of agreement ( $K = 0.8$  to 1.0) in clinical examinations for the different outcomes.

A minimum level of education and maturity was expected from the students included to respond to the self-administered questionnaire. Those with comprehension difficulties answering the questionnaire were excluded.

The original project was conducted follow-

ing Resolution no. 466/2012 of the National Health Council after the approval by the research ethics committee of the Universidade Federal de Pernambuco (CAAE: 45873515.1.0000.5208).

In this study, the dependent variable was self-medication, measured from the use (or not) of medications purchased and consumed without a prescription. Data collection was conducted at schools from September to December 2015 using non-clinical data obtained by a self-administered questionnaire. This test verified the presence or absence of self-medication and the factors related to this practice. Researchers discussed the questionnaire during its formulation and tested it on a small group of adolescents, later included in the sample, to verify the easiness of comprehension and correct information distortions and inconsistencies.

The instruments were applied in school environments that were available and reserved for the data collection, such as classrooms, auditoriums, libraries, or cafeterias. The application was made to groups of students after prior explanation and clarification of any doubts about the objectives and methods of the study.

Descriptive statistical analysis was performed using SPSS (version 21.0), employing absolute frequencies and percentages, with a 5% margin of error applied to statistical tests.

## RESULTS AND DISCUSSION

Given the initial sample size (1,156 adolescents), some losses occurred during data collection. They were related to improperly completed questionnaires and students who refused to participate in the study or missed school on the day of application.

Thus, the final sample comprised 1,035 school adolescents. A sample loss of 21.72% of the initial sample was also observed in a similar study<sup>6</sup>, which was related to the absence of students on interview day, refusal to participate, and failure to submit the consent forms.

Therefore, given that the initial sample was calculated for a lower prevalence estimate (10%), the losses did not reduce statistical power for the predicted estimates.

The evaluation of the 1,035 valid questionnaires indicated the mean age of the students as being 15.63 years, with a standard deviation of 1.20 years and a median of 15.00 years.

The mean age of around 15 years old is an interesting fact when compared with the school grade that the adolescents occupy. Most (70.1%) of adolescents were enrolled between the first and fifth years of elementary school. This fact highlights an inconsistency regarding the guidelines of the Ministry of Education and Culture, which recommends that students finish their ninth year of middle school at the age of 14 years and start high school at 15 years<sup>7</sup>.

Interestingly, when comparing this discussion with the number of adolescents who claim not to have failed any grades in their school curriculum (55.7%), the academic delay would not be related to the excessive number of failed grades but perhaps to dropping out and then returning later to school or late entry into basic education.

**Table 1.** Distribution of school adolescents according to sociodemographic data

Variable	n	%
<b>Total</b>	<b>1035</b>	<b>100.0</b>
<b>Age</b>		
14	176	17.0
15	365	35.3
16	256	24.7
17	161	15.6
18 or more	77	7.4
<b>Gender</b>		
Male	473	45.7
Female	562	54.3
<b>Race</b>		
White	226	21.8
Black	136	13.1
Brown (mixed race)	593	57.3
Yellow	34	3.3
Indigenous	46	4.4
<b>Study years</b>		
1st to 5th grades	726	70.1
6th to 9th grades	309	29.9
<b>Failures at school</b>		
Yes	459	44.3
No	576	55.7
<b>Works?</b>		
Yes	75	7.2
No	960	92.8

Regarding the education of mothers, only 15.6% have completed high school, and 19.1% have completed higher education. However, 22.2% of adolescents did not know the educational level of their mothers. Thus, this sample is homogeneous

when considering socioeconomic data.

Important aspects are related to the self-esteem of the adolescents (Table 2).

**Table 2.** Distribution of school adolescents according to sociodemographic data

Variable	n	%
<b>Total</b>	<b>1035</b>	<b>100</b>
<b>Who works in the family?</b>		
Only my father	410	39.6
Only my mother	226	21.8
Both works (father and mother)	311	30.0
None works	88	8.5
<b>Education of mother</b>		
Early middle school (1st to 4th grades)	148	14.3
Later middle school (5th to 8th grades)	285	27.5
High school (1st to 3rd grades)	161	15.6
Higher education	198	19.1
Never went to school	13	1.3
Do not know	230	22.2
<b>Situation of the house</b>		
Owned	887	85.7
Rented	117	11.3
Living as a guest	9	0.9
<b>Alcohol consumption</b>		
Yes	66	6.4
No	969	93.6
<b>Practice of leisure activities</b>		
Yes	340	32.9
No	695	67.1
<b>Self-esteem Low</b>		
Moderate	510	49.3
High	249	24.1

Most students had moderate self-esteem (49.3%), requiring special attention to these cases, especially those who reported low self-esteem. This condition may contribute to emotional instability and a sense of not belonging to the group in which they are inserted, potentially leading to depressive episodes. These episodes may result in harmful behaviors to health, such as alcohol consumption and tobacco use, as well as self-medication.

Studies have demonstrated how self-esteem can modulate behaviors, with this construct having been positively associated with high self-esteem with age and positive oral health behaviors, regardless of the gender of adolescents<sup>8</sup>.

When these relationships are addressed, they

reveal that substance use is a learned pattern of behavior motivated by the desire to reduce negative moods at the time. Therefore, other factors could be related to this process, such as the presence of conflicting relationships with parents and family, friends, and partners<sup>9</sup>.

Habits related to the use of alcohol, tobacco, and medications are different forms of behavioral expression; however, they arise from the use of toxic substances with the potential to relieve stress and represent behaviors linked to adult life. Therefore, common motivations may elicit these behaviors represented by social circumstances<sup>10</sup>.

In this sense, few adolescents consumed alcohol (6.4%), contradicting previous studies<sup>9,10</sup>. The lack of leisure activities may also influence this process, as 67.1% of the population studied did not practice leisure activities.

The present study estimated that 64.7% (670 of the 1,035) of adolescents used medications without a prescription from a qualified professional. In this sense, through the interval technique, our estimation with 95% reliability was that the percentage of adolescents who practice self-medication in the population studied varies from 61.8% to 67.6%. Thus, the result was slightly higher than that of other studies on the theme, whether they were conducted in a school environment or not. For example, a study conducted in Maringá (Paraná, Brazil) with adolescents from public and private schools reported a prevalence of 52.6%, with higher rates among females<sup>6</sup>.

In another study, the prevalence of self-medication was estimated via a survey in the cities of Limeira and Piracicaba (São Paulo, Brazil), indicating a prevalence of 56.6%<sup>4</sup>. However, addressing adolescents aged 18 years living in the city of Pelotas (Rio Grande do Sul, Brazil), a third study found that self-medication corresponded to 65.1% (with a 95% confidence interval ranging from 62.8% to 67.4%)<sup>5</sup>, corroborating our results. These variations may be multifactorial, being attributed to regional differences between the cities evaluated, as well as variations in age groups and environments used for data collection. Moreover, the first two studies adopted a recall period of 15 days prior to the interview, a fact that may have limited the number of references to the practice of self-medication compared with the present study, which had no limited period.

## CONCLUSION

The findings of the present study are concerning, as the use of medications without proper guidance (driven by limited knowledge and low autonomy among adolescents) represents significant risks. These risks stem from factors, such as the questionable quality of pharmaceutical products, improper storage of the medications at home (i.e., often maintained without professional guidance and composed of leftovers from previous treatments), and the selection of inappropriate medications.

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