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ORIGINAL ARTICLE

SELF-MEDICATION AMONG INDIVIDUALS ATTENDING A UNIVERSITY DENTAL CLINIC IN SANTIAGO, CHILE, 2022

Automedicación en personas que acuden a una clínica odontológica universitaria de Santiago de Chile, 2022

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ABSTRACT

Objetive: To identify the determinants of self-medication for dental reasons among individuals treated at a dental clinic in Santiago, Chile, 2022.

Materials and Methods: A quantitative, observational, and cross-sectional study was conducted. The sample consisted of individuals aged 18 to 75 years, residents of the Metropolitan Region, who were treated at the dental clinic of Universidad Andrés Bello in Santiago, and who had self-medicated for dental reasons within the past six months.

Results: Among the 206 participants, 64.6% reported having self-medicated for dental reasons one to three times within the past six months. Acetaminophen was reported as the first-choice analgesic for 23.3% of the subjects, and 63.6% purchased their medications at pharmacies without a prior prescription. In 65.5% of cases, family and/or friends recommended self-medication as a solution for dental pain. Additionally, 31.6% of participants recognized the risk of poisoning or overdosing as a potential negative outcome.

Conclusion: This research shows a high prevalence of self-medication among the subjects evaluated. The irrational use of medications was identified as a common practice, and although participants consider it risky, it remains their first option to relieve symptoms. These findings highlight the need to educate and raise awareness among the population about the risks of self-medication.

Keywords: Self medication; Self administration; Dentistry; Drug prescriptions; Dental clinics; Acetaminophen.

RESUMEN

Objetivo: Identificar los determinantes de la automedicación por motivos dentales en personas atendidas en una clínica odontológica en Santiago de Chile, 2022.

Materiales y métodos: Estudio cuantitativo, observacional, transversal. La muestra incluyó personas entre 18 y 75 años, residentes de la región Metropolitana, quienes se atendieron en la clínica odontológica de la Universidad Andrés Bello, sede Santiago y se automedicaron en los últimos seis meses por motivos dentales.

Resultado: De los 206 participantes, el 64,6% se automedicaron una a tres veces en los últimos seis meses por motivos dentales, el 23,3% utilizaron acetaminofén como analgésico de primera elección y el 63,6% compraron sus medicamentos en farmacias sin prescripción previa. En el 65,5% de los casos, la familia y/o amigos recomiendan la automedicación como solución para el dolor dental. El 31,6% de los participantes reconoció el riesgo de intoxicación como posible resultado.

Conclusión: Esta investigación muestra una alta prevalencia de automedicación entre las personas evaluadas. Se observó que el uso irracional de medicamentos es una práctica común, y aunque las personas lo consideran riesgoso, sigue siendo su primera opción para aliviar síntomas. Estos hallazgos resaltan la necesidad de educar y concientizar a la población sobre los riesgos de la automedicación.

Palabras Clave: Automedicación; Autoadministración; Odontología, Prescripciones de Medicamentos; Clínicas odontológicas; Paracetamol.

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INTRODUCTION

Self-medication refers to the self-administration of a pharmacological or behavioral treatment without a medical prescription. It is also known as OTC (over the counter) medication.[1-2] This generic term includes a range of behaviors, from self-care to disease prevention and ma-nagement.[3] As such, self-medication is not limited to the intake of medications but also involves interventions to modify a person's lifestyle.[3] In recent years, self-medication has increased and become a serious public health concern in developing and developed countries.[4]

Although, self-medication may promote a sense of self-sufficiency, of being in charge of one's own life, and reduce expenses,[5] it can have serious consequences such as delayed diagnosis of diseases, drug resistance, the development of comorbidities and, in some cases, even death.[4,6,7]

The increasing prevalence of self-medication poses a serious challenge for health policymakers and decision-makers.[7] This increase may be attributed to different factors such as the high cost of medical consultations,[8] the greater availability and ease of access to medications, the lack of access to adequate medical facilities and services, and patients' previous experiences with treatments.[9]

The determinants of self-medication include physical/psychological illnesses, social, cultural, and financial conditions of patients, along with national policies that regulate the use and sale of medications.[10] In addition, self-medication has also increased due to the widespread availability and sale of over-the-counter medications.[7]

It is particularly important to highlight that young students have greater access to information associated with self-medication, increasing the vulnerability of this group to self-medication.[10]

In the dental field, self-medication has become a serious concern due to the risks it poses to the individual. This practice can cause adverse reactions, bacterial resistance, and more severe issues for patients.[11] These problems could be entirely avoidable if a more responsible approach were adopted in the self-prescription of medications, especially regarding the use of antibiotics.

This practice is common with medications that require a prescription, especially when patients have been previously instructed to take a specific drug and reuse it on a subsequent occasion, or when they go directly to a pharmacy to obtain it.[12] without a clear understanding of their condition, which could put their health at risk.

Various studies on self-medication in dentistry report that the main cause is toothache or dental pain.[13] The most commonly used medications are analgesics and non-steroidal antiinflammatory drugs, which are often recommended by pharmacists, acquaintances, or the media.[14] Consequently, pain management is commonly achieved by taking medications without a prescription.

An analysis of the available literature shows a lack of regulation, and, in the case of Chile, there are still no records or studies that evaluate the behavior of patients regarding the management of dental pain.

Therefore, it is interesting and necessary to research this common practice within the Chi-

lean population to inform patients about this very important issue and emphasize the need for a more responsible behavior. This study aimed to identify the determinants of self-medication related to dental pain in individuals treated at a university dental clinic in Santiago, Chile, in 2022.

MATERIALS AND METHODS

A quantitative, observational, and cross-sectional study was conducted. Participants were individuals over 18 years of age, residents of the Metropolitan Region, who have self-medicated within the past six months and have attended the Dental Clinic of Universidad Andrés Bello, Santiago, between the months of May and July 2022. Individuals with cognitive impairment that prevented them from answering questions autonomously were excluded from the study.

The sample size was estimated with a confidence level of 95%, a precision of +/- 5 % points, and an expected proportion of self-medication of 13.08%. The expected loss proportion was 10%. A non-probabilistic convenience sampling method was used, where people who were in the waiting room at the university dental clinic were invited to participate. They were read an informed consent and asked to sign it (Ethical Approval number PROPRGFO_2022_23). Afterwards, they were given a self-administered questionnaire containing 17 multiple-choice questions.

The questions in the questionnaire were based on both a previous study[15] and on the researchers' own creation. All questions were evaluated and tested by three professionals. The pharmacological content was reviewed and approved by an expert in the field, while the design of the questions and the questionnaire as a whole was evaluated and approved by two experts in the area.

Figure 1.
Patients reported last visit to the dentist.

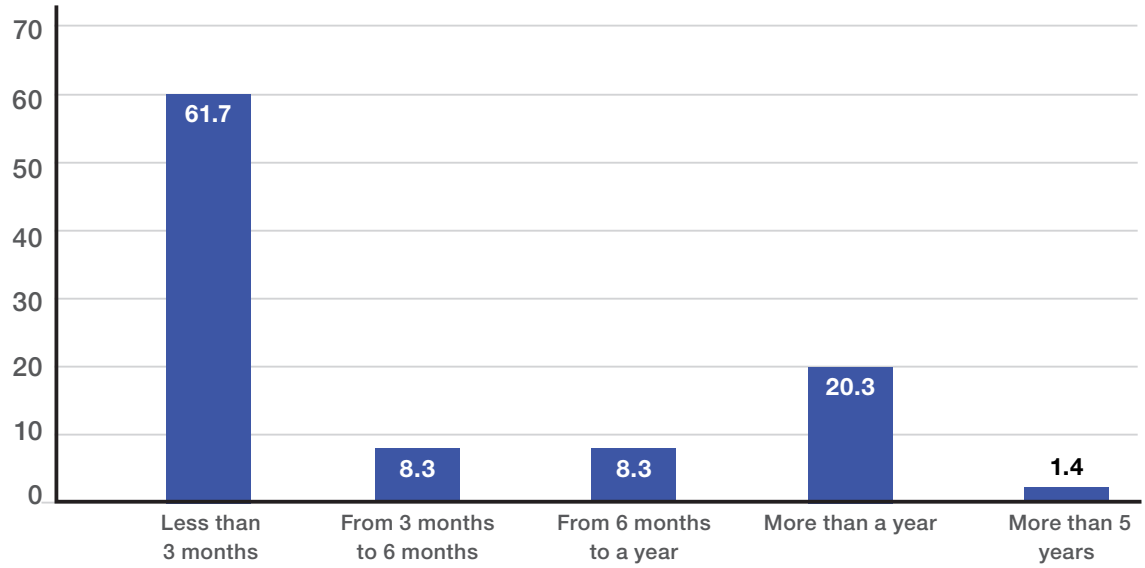

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Figure 2.

Reasons why patients do not go to the dentist when they experience dental pain.

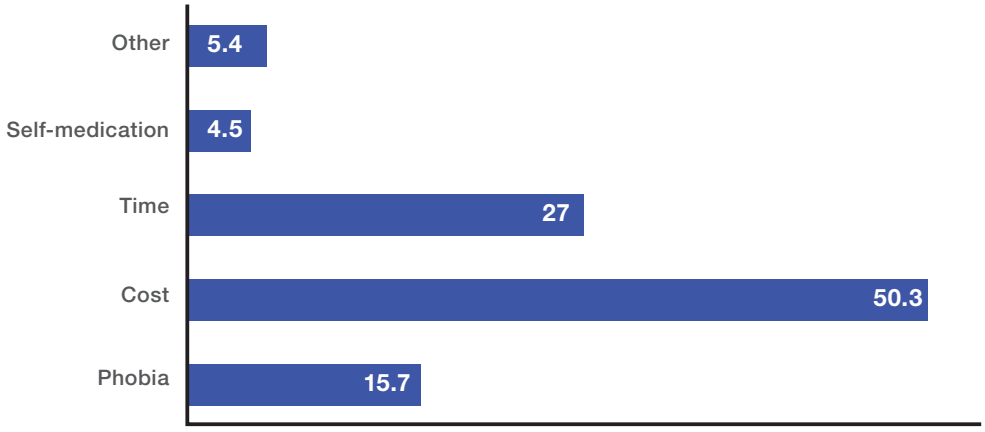


Figure 3.

Medications taken by patients in the last 6 months.

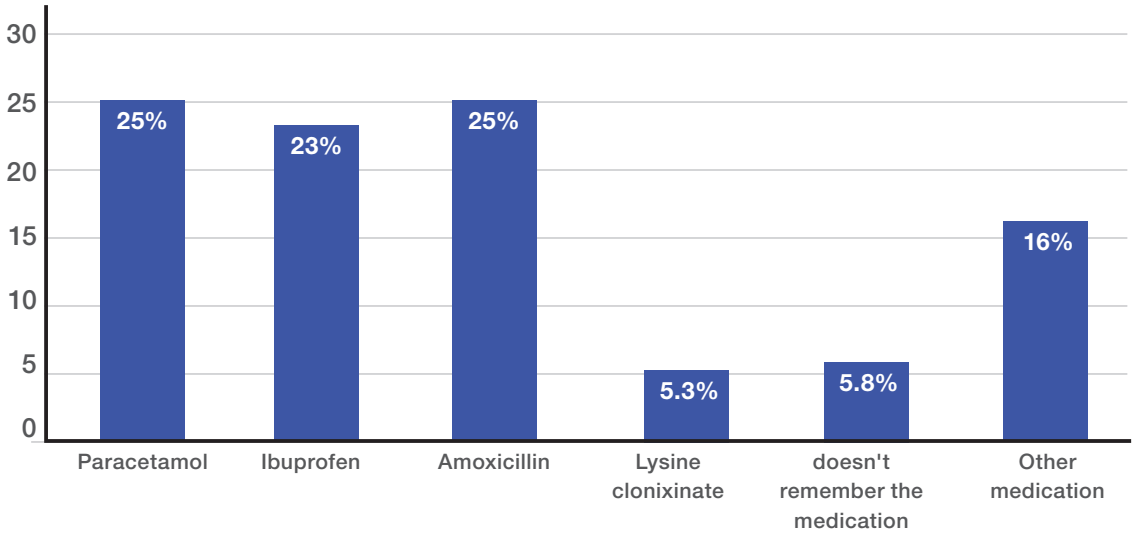


Figure 4.

Behavior and persistence of patients when dental pain persisted.

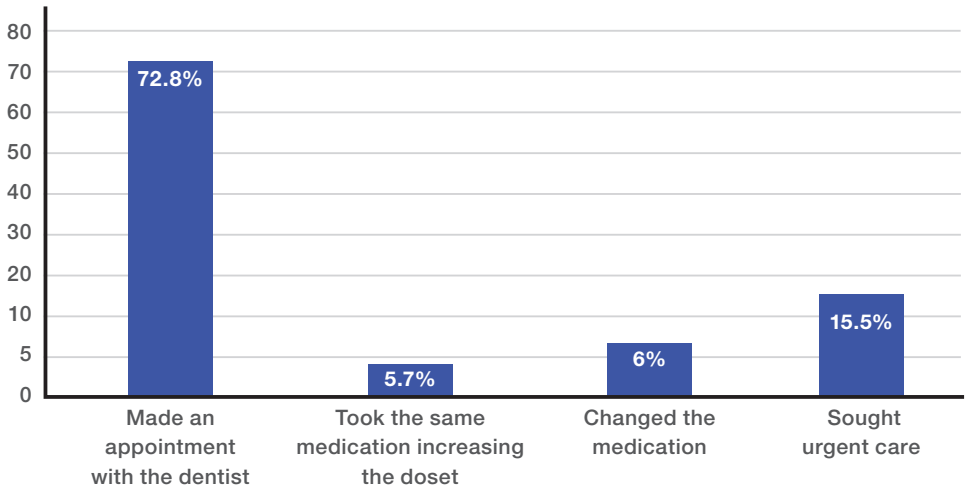
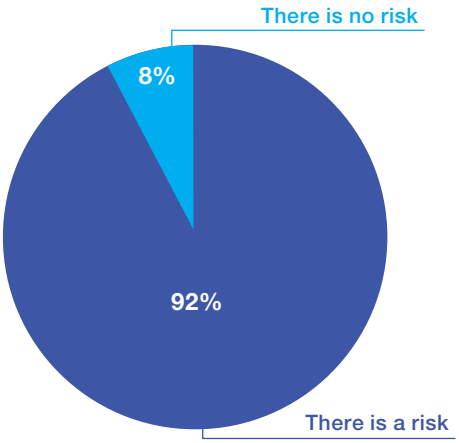


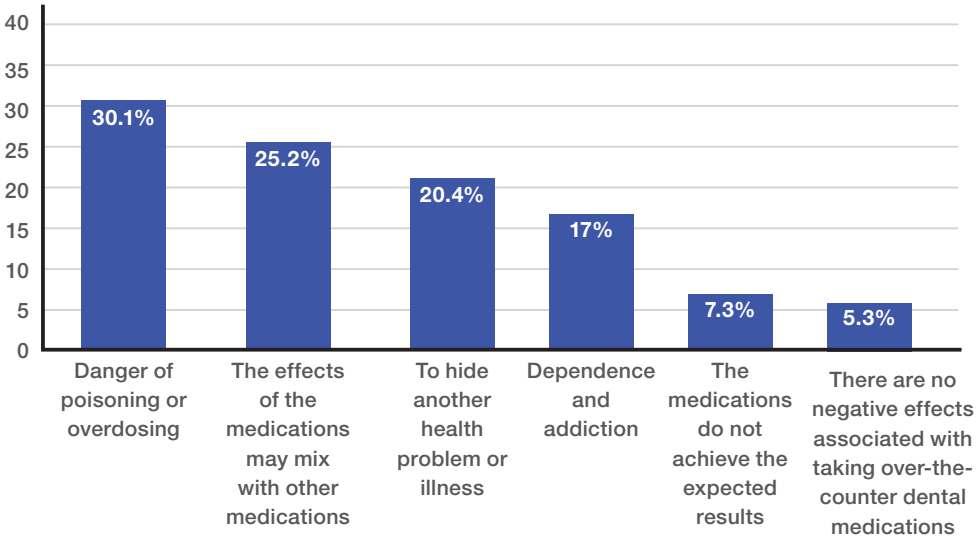
Figure 5.
Risk perception of patients regarding self medicating for dental pain.



Finally, the questionnaire was tested with a group of 15 people to ensure its legibility. The questions evaluated sociodemographic variables, health history, characterization of dental visits, frequency and reasons for self-medication, access to medications, and knowledge of adverse effects.

A descriptive statistical analysis was performed using frequency tables and graphical tools to estimate the number of self-medicated medications and their associated characteristics.

Figure 6.
Knowledge of patients about adverse effects regarding self medicating for dental pain.



RESULTS

The response rate was 71% (n=206). Of the participants, 63.1% were females, the mean age was 41.19 (SD=14.930), 90% were Chilean, and approximately 28.6% had at least completed secondary education. Half of the respondents reported suffering from controlled chronic diseases, such as high blood pressure (16%) and diabetes mellitus (8.3%) (Table 1).

Self-medication in dentistry occurs in a context in which 61.7% of individuals reported having visited the dentist in the past three months, while approximately 20% had not attended in over a year (Figure 1). When analyzing the reasons for not visiting the dentist, it was observed that 50.3% of participants mentioned cost as the main barrier, followed by lack of time, which affected 27% (Figure 2).

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Table 1

Characterization of the sample.

		Frequency (n)	Percentage (%)
Sex/gender	Female	130	63.1
	Male	76	36.9
	Total	206	100.0
Age	<30 years	55	26.6
	30-59 years	121	58.7
	>= 60 years	30	14.5
	Total	**206**	**100**
Nationality	Chilean	186	90.3
	Venezuelan	11	5.30
	Colombian	3	1.50
	Peruvian	4	1.90
	Haitian	2	1.00
	Total	**206**	**100.0**
Educational level	Incomplete primary education	11	5.30
	Complete primary education	6	2.90
	Incomplete high school ed.	25	12.1
	Complete high school ed.	59	28.6
	Incomplete university ed.	47	22.8
	Complete university ed.	53	25.7
	Postgraduate studies	5	2.40
	Total	**206**	**100.0**
Chronic diseases (self-reported)	Diabetes	17	8.30
	Hypertension	33	16.0

Table 2

Reasons for self-medication for dental causes.

Causes	Frequency (n)	Percentage (%)
Toothache/dental pain	187	91.7
Tooth mobility	12	5.9
Orofacial inflammation	25	12.3
Red/bleeding gums	17	8.3
Burning sensation	4	2.0
Trauma	6	2.9
Other	11	5.4
Total	**262**	**100**

Table 3

Distribution of responses regarding recommendations of over-the-counter dental medications.

	Frequency (n)	Percentage (%)
Relatives and/or friends	134	54.9
Advertisements	30	12.3
Pharmacy assistant and/or pharmaceutical chemist	55	22.5
Other	25	10.2
Total	**244**	**100**

Table 4
Distribution of responses regarding the places where individuals get over-the-counter dental medications.

	Frequency (n)	Percentage (%)
Pharmacies	131	50.4
Street fairs	72	27.7
Medications I have at home	52	20.0
Other	5	1.9
Total	**260**	**100**

Regarding the frequency of self-medication, 64.6% of the participants reported having taken medications without a dental prescription one to three times in the past six months. The respondents indicated that painkillers were the most commonly consumed medication (63.4%), followed by anti-inflammatory drugs (62%), and antibiotics in third place with 37.1%. The medications most commonly consumed by respondents in the past six months were paracetamol (23.3%), followed by ibuprofen (18.9%), and amoxicillin (11.2%) (Figure 3).

The causes of self-medication identified by the participants are detailed in Table 2. It is important to note that the main reason for self-medication was toothache or dental pain (91.7%).

As for those who recommended self-medication to the participants, 54.95% were family members and/or friends, followed by pharmacists with 22.5% (Table 3). On the other hand, 50.4% of individuals purchase their medicines in pharmacies, while 27.7% buy them in non-conventional places such as street fairs (Table 4). If the pain persisted, 72.8% of participants said they would make an appointment with a dentist, and 15.5% would seek urgent care (Figure 4).

Ninety-two point two percent (92.2%) of respondents acknowledged that self-medication is risky for their health (Figure 5), with the risk of poisoning being considered of greatest concern (30.1%), followed by the possible interaction between different medications (25.2%) (Figure 6).

DISCUSSION

The present study aimed to identify the factors associated with self-medication related to dental pain among participants who attended a university dental clinic in Santiago, Chile, in 2022. After conducting a survey, it was observed that 64.6% of the participants had self-medicated at least one to three times in the past six months. This prevalence is similar to that reported by Gonzalez *et al.,*[15] in an online study which found that 61.2% of respondents self-medicated.

These results are also comparable to other studies in Chile (44.5%) and Peru (42.9%).[16,17] In this way, this study shows prevalences and sample characteristics similar to other self-medication studies conducted in Chile and Latin America, in which it has been observed that the higher educational level may be associated to a better understanding of medication use and,

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consequently, greater independence in decision-making to address health problems.[16]

Although a direct relationship between sex/gender and self-medication has not been demonstrated, it was found that 63.1% of females had self-medicated, a finding supported by the study by Alucena *et al.,*[18] This link has also been previously described in a study conducted in Chile that showed that 85.7% of women self-medicated, compared to 78% of males.[18]

This difference could be explained by the fact that women are more likely to recognize their symptoms, leading them to engage in self-medication behaviors on a more regular basis.[13]
On the other hand, 61.7% of respondents reported having visited the dentist less than three months ago, while 20.4% reported not having gone for more than a year. This could indicate that people who suffer from pain prefer to try the readily available medications in an attempt to solve their problem before seeking professional care, often delaying timely treatment and only looking for professional assistance when medications do not achieve the expected results.[19]

Among the reasons for not visiting the dentist, the cost of the procedure was reported as the main cause for not seeking professional help, accounting for 50.3% of the responses, demonstrating the need for greater coverage and access to dental care in Chile.
Similarly, a study conducted in Mexico identified individual factors that limit the search for care such as the lack of time and limited financial resources. This could be attributed to the fact that dental care in that country has a more curative than preventive approach.[20]

The most commonly used medications for dental pain were analgesics and antiinflam-matories, followed by antibiotics.
The use of antibiotics could be associated with the mistaken belief that they help treat pain. These results coincide with the data documented by Becerra *et al.,*[21] In a study conducted in Cuenca, Ecuador, analgesics and anti-inflammatories were used as the first choice, followed by antibiotics. The authors suggest that this trend may result from easy access to these medications and little restriction when acquiring them.[21,22]

Specifically, paracetamol was the most consumed medication (25.62%), and alarmingly, amoxicillin was widely used accounting for 13.59%. These results differ from a study conducted at Universidad de Buenos Aires, which determined that ibuprofen was the most consumed medication along with amoxicillin[23] This finding is concerning as the unjustified use of antibiotics could have more serious consequences, such as bacterial resistance, becoming a global health problem.[24]

The use of analgesics can be attributed to dental pain as the main cause of self-medication as they provide rapid pain relief.[24] However, although they alleviate the symptoms, they do not eliminate the underlying cause, which could lead to more serious consequences. In Peru, Maira Nogueira reported that dental pain was the main reason for self-medication, which reflects a lack of education about the importance of oral health.[25]
A comparable study conducted in Lima reported similar results, where dental pain was the primary cause of self-medication. This was most prevalent in patients with professional education, and analgesics were the most consumed medication.[26]

Approximately 60% of respondents stated that family and friends were the primary sources recommending self-medication, suggesting that people often accept previous positive experiences as a valid reference for this practice.[26] Chemists-pharmacists ranked in second place. Similar results were found by Araujo et al. regarding who recommended the medications.[27] Pharmacists play a fundamental role, as they provide a direct means of acquiring medications without a prescription.[27]

Although 92.8% of respondents acknowledged that self-medication is risky, 50.4% reported obtaining medications directly from pharmacies without consulting a healthcare professional. Deysy Felipe obtained similar results in Peru, where 57% of individuals went to pharmacies to self-medicate, highlighting the responsibility of pharmacy staff when it comes to providing care and proper guidance for people.[28]

In 2015, the Chilean Ministry of Health published a document addressing responsible self-medication, in which consumers are accountable for their own health. This mainly applies to over-the-counter medications, as opposed to self-prescription. The document establishes that the pharmacist's response to the demand of the patient who decides to self-care should include and promote the rational use of medicines and improve the practice of self-medication.[29]

However, it does not explicitly state a model for regulating medications. In 2021, the PAHO issued a bulletin discussing the motivations for self-medication, focusing on the risks of self-medication particularly regarding antibiotics. The bulletin indicates that antibiotics should not be sold over the counter, but only when accompanied by a prescription issued by a specialist.[30]

A literature review suggests that the most common causes of self-medication with NSAIDs are headaches, menstrual cramps, and fever, with prevalence of medication use reaching 50%. This suggests that in general health contexts, the prevalence of self-medication is similar to the values found in this study regarding self-medication for dental reasons.[31]

Among the limitations of the study, we identified that the sample size (*i.e.* number of patients) could have been larger, and that the survey could have been distributed more equally among men and women, to better establish gender differences. More questions could also have been included in the questionnaire to have gathered more information from the respondents, as well as to have differentiated self-medication from other forms of drug administration.

It would also have been interesting to know in detail the medications used by all the respondents, since several forgot which ones they had taken at some point. A list of medications with images could then have been presented, describing which medications were anti-inflammatories, analgesics, antibiotics, etc. It is suggested that future research be extended to patients who use public healthcare services to evaluate how self-medication manifests itself in this population.

CONCLUSION

The present research highlights the urgent need to design policies that impact self-care practices and lifestyles, thereby strengthening the prevention and promotion of oral health, providing comprehensive care that improves the quality of life of all people.

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As a result of forced confinement due to the COVID-19 pandemic, this behavior persisted among the respondents, due to the decrease in dental care throughout Chile, where only urgent care was prioritized.

The concerning figures obtained in this analysis, and in comparison with other similar studies, demonstrate that self-medication is a global health problem that must be addressed immediately through public policies that ensure proper supervision of the sale and acquisition of medications.

The state is responsible for ensuring safety and reliability for the public, for the prescribing professional, and for the pharmacist, thus reducing the prevalence of harmful habits that encourage the practice of self-medication. It is important to educate and inform people about the rational use of medications at the appropriate time, the correct dose, and the risks associated with the consumption of medications by personal decision, thus promoting self-medication as a component of responsible self-care.

Finally, there is limited research in Chile that analyzes this practice at the dental level, so it is necessary to conduct future studies that cover a representative population at the national level, quantifying and characterizing self-medication for dental reasons. This will help determine the scope of this problem, establish the importance of this phenomenon, and contribute to the development of new policies that address its actual impact and relevance.

CONFLICT OF INTERESTS

The author shows no conflict of interest with respect to the article.

ETHICS APPROVAL

This study received approval from the institutional Ethics Committee (number PROPRGFO_2022_23)

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AUTHORS' CONTRIBUTIONS

Dafna Benadof: Conceptualization, Methodology; Review and Editing of the Article.

Alejandra Rojas: Supervision, Visualization, Review and Editing of the Article

Claudia Muñoz: Research, Original draft of the Article

Natalia Gaspar: Research, Original draft of the article.

Carolina Vidal: Validation, Data analysis, Review and editing of the article.

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