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Original Article

Factors associated with self-medication with nonsteroidal anti-inflammatory drugs in the Dental Service

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Factors associated with self-medication with non-steroidal anti-inflammatory drugs in the Stomatology Service

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SUMMARY

Self-medication with NSAIDs is a current public health problem associated with multiple factors, which has become a common and constantly increasing practice. In order to

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identify the risk factors associated with self-medication with nonsteroidal anti-inflammatory drugs in a dental service, a case-control analytical study was conducted in 364 patients treated in the Dental Service of the "David Moreno Domínguez" Teaching Polyclinic in Santa Rita, Jiguaní municipality, Granma province, between1 ofJanuary 2021 to December 31, 2023. The association between sociodemographic variables, reasons for self-medication, and environmental influence was determined using binary logistic regression. The reasons for self-medication (lack of time, considering having personal knowledge or experience, and reporting that symptoms were not severe) and environmental influence (family, friends, and the media) were the factors associated with self-medication in patients in the sample. The logistic regression model identified factors related to self-medication with nonsteroidal anti-inflammatory drugs.

Keywords: Self-medication; Nonsteroidal anti-inflammatory drugs; Dentistry.

SUMMARY

Self-medication of NSAIDs is a current public health problem associated with multiple factors, which has become a common practice and is constantly increasing. The aim was to identify the risk factors associated with self-medication with non-steroidal anti-inflammatory drugs in a Stomatology Department. A case-control analytical study was carried out on 364 patients treated at the Stomatology Service of the "David Moreno Domínguez" Teaching Polyclinic in Santa Rita, Jiguaní municipality, Granma province, in the period from January 1, 2021 to December 31, 2023. The association of sociodemographic variables, reasons for self-medication and the influence of the environment was determined using binary logistic regression. The reasons for self-medication (lack of time, considering having their own knowledge or experience, and reporting that the symptoms were not serious) and the influence of the environment

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(family, friend, and the media), were the factors associated with self-medication in patients who made up the sample. The logistic regression model allowed the identification of factors related to self-medication with non-steroidal anti-inflammatory drugs.

Key words: Self-medication; Non-steroidal anti-inflammatory drugs; Stomatology.

SUMMARY

Self-medication of NSAIDs is a current public health problem associated with multiple factors, which has become a common practice and is constantly growing. The objective was to identify risk factors associated with self-medication with non-steroidal anti-inflammatories in a Stomatology Service. An analytical case-control study was carried out on 364 patients treated at the Stomatology Service of Policlínica Ensino "David Moreno Domínguez" in Santa Rita, municipality of Jiguaní, province of Granma, in the period from January 1, 2021 to December 31, 2023. The association of the variables Sociodemographic characteristics, reasons for self-medication and environmental influence were determined by the binary logistic regression method. The reasons for self-medication (lack of time, consider your knowledge or personal experience and refer that the symptoms were not serious) and the influence of the environment (family, friends and media) are the factors associated with self-medication in the doentes who compuseram amostra. The logistic regression model allows the identification of factors related to self-medication with non-steroidal anti-inflammatories.

Keywords: Exclusive maternal feeding; Morbidity; Baby.

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Introduction

According to the World Health Organization (WHO), self-medication is defined as the selection and use of medications by individuals to treat self-recognized illnesses or symptoms. Self-medication is part of self-care and is considered a primary public health resource in the health care system. (1)

This is due to the population's assumption of responsibility for their health and the impact of the media on self-medication. However, this trend toward self-care is widespread worldwide, with figures around 60% in countries as economically and culturally diverse as Spain and India. Seven out of ten patients use therapeutic measures in the fifteen days prior to their medical consultation; of these, 75% use medication on their own initiative. (2)

However, alarmingly, self-medication has been increasing as a voluntary action that involves health risks, not only because of the effects that may arise at some point due to the indiscriminate use of the medication, but also because it may mask the symptoms of a disease, prolong it, cause resistance or even worsen the disease itself, even in more vulnerable groups such as children, pregnant women and nursing mothers. (3)

Among the most common symptoms for self-medication are: pain, headache, common cold, allergies, musculoskeletal diseases, respiratory infections, gastrointestinal symptoms. (4) Among the most consumed medications for self-medication are analgesics, anti-inflammatories and antipyretics, then to a lesser extent antibiotics, vitamin supplements, among others. (5) Within all these drugs, the most purchased are non-steroidal anti-inflammatory drugs (NSAIDs). (6)

NSAIDs are among the most widely used pharmacological agents worldwide and can be purchased with or without a prescription. Due to their anti-inflammatory, analgesic, and antipyretic properties, they are most frequently used in painful processes such as musculoskeletal diseases, chronic or acute pain processes, headaches, dental pain, menstrual pain, among others. (7)

Regarding the prevalence of self-medication with NSAIDs, one study found an increase from 19% to 21% in the last decade. Among the most commonly used NSAIDs, two studies found that diclofenac was the most commonly used, followed by ibuprofen. In Spain and Germany, ibuprofen was the most commonly used analgesic. Other studies, such as one conducted in Nigeria, showed that the most commonly used NSAID was aspirin (62.2%) followed by diclofenac (13.7%). (8,9)

Among the most common reasons for self-medication were found to be that the patient considered their illness not to be serious and due to lack of time; among other reasons were the over-the-counter sale of medications, fear of going to the doctor and the belief that they did not need it, and advertising and recommendations from people close to them. (7,9)

In dentistry, NSAID use is very common, given that they are prescribed for the treatment of trauma and pain; they can be used as prophylactic or curative drugs in dental procedures; furthermore, because dental conditions are common and many of them are associated with pain, this leads to self-medication by a significant number of patients. (10)

Self-medication with NSAIDs is a current public health problem associated with multiple factors. It has become a common and steadily increasing practice, manifesting itself as a form of self-care, with unawareness of the long-term side or adverse effects. Local studies are needed to understand the probable causes of the problem. This led to the design of this study, which aimed to identify the risk factors associated with self-medication with nonsteroidal anti-inflammatory drugs in a dental department.

Methods

An analytical study was carried out using cases and controls matched by gender with a 1:3 ratio (cases/witnesses) of the patients treated in the Stomatology service of the "David Moreno Domínguez" teaching polyclinic in Santa Rita, Jiguaní municipality, Granma

province, in the period between1 ofJanuary 2021 to December 31, 2023.

The sample size was determined using the Statcalc program in EpiInfo 2002. The following parameters were considered: confidence interval 95%, study power 80%, case-control ratio 1:3, expected percentage of disease occurrence among controls 23%, and minimum odds ratio to be detected 1, based on international and national literature. This yielded a total of 364 patients, 91 cases, and 273 controls.

Patients of both sexes, aged 18 years or older, who consented to participate in the research were included as cases and controls. Cases were patients who had used an NSAID without a prescription within the six months prior to the study, for at least three days; controls were patients who did not meet the above criteria.

Patients who did not wish to participate in the study and those with mental disorders or dementia that made primary data collection difficult were excluded from this study.

The dependent variable was self-medication with NSAIDs; and the independent variables were: age (completed years), female sex; education (less than pre-university), marital status (single), employment status (employed), monthly income (less than the national average), reason for self-medication (lack of time, believes they have their own knowledge or experience, symptoms were not severe), and environmental influence (family, friends, media).

Statistical analysis began with sample characterization, which involved describing all variables. For quantitative variables, the means and standard deviations were determined, along with the minimum and maximum values for each distribution.

A univariate strategy was used to analyze factors associated with self-medication, based on estimating risk using the OR. Point estimates and 95% confidence interval estimates of the ORs were obtained. For each variable, the hypothesis that the population OR was actually greater than one was tested with a significance level of less than 0.05.

The multivariate strategy was based on fitting a binary logistic regression model using the backward stepwise method with all variables considered risk factors in the univariate

analysis. In this way, the independent influence of each variable on the likelihood of developing self-medication was assessed, while controlling for all other variables. The logistic regression function was fitted using the maximum likelihood method, which is equivalent to estimating its parameters. The Hosmer-Lemeshow chi-square goodness-of-fit statistic was also applied. If the probability associated with the test statistic was greater than 0.05, the models were considered to fit the data.

All analyses were performed using the SPSS statistical package version 20.0 for Windows (SPSS Inc., Chicago, Illinois, United States), and the results are presented in statistical tables.

Results

Table 1 shows the relationship of the qualitative variables, female patients represented 44.23% (161 patients);53.02% were workers; the reasons for self-medication (lack of time, feeling they had their own knowledge or experience, and reporting that the symptoms were not severe) and the influence of their environment (family, friends, and the media) contributed statistically significantly to the development of self-medication.

Table 1. Comparison between patients self-medicating with NSAIDs or notQualitative variables.

Variable	Self-medicated		No self-medication		Total		p*
	No	%	No	%	No	%	
	91	25.00	273	75.00	364	100.00	
Female sex	39	10.71	122	33.52	161	44.23	0.8550
Low level of education	11	3.02	40	10.99	51	14.01	0.6629
Marital status (single)	13	3.57	37	10.16	50	13.74	0.8604
Work activity	43	11.81	150	41.21	193	53.02	0.2493

(worker)							
MA. 1	69	18.96	137	37.64	206	56.59	0.0000
MA. 2	61	16.76	31	8.52	92	25.27	0.0000
MA. 3	78	21.43	50	13.74	128	35.16	0.0000
IE. 1	59	16.21	43	11.81	102	28.02	0.0000
IE. 2	75	20.60	109	29.95	184	50.55	0.0000
IE. 3	63	17.31	103	28.30	166	45.60	0.0000

Symbolism: MA. Reason for self-medication (1. lack of time, 2. considers having own knowledge or experience, 3. the symptoms were not severe). IE. Influence of the environment (1. family, 2. friend, 3. media).

When comparing the quantitative variables, no significant differences were observed; therefore, it is suggested that they did not contribute to self-medication (Table 2).

Table 2. Comparison between patients self-medicating with NSAIDs or not. Quantitative variables.

Variable	Self-medicated (n=91)	Not self-medicated (n=273)	p*
	Mean/median (SD)	Mean/median (SD)	
Age	49/49 (11.51)	48/48 (9.34)	0.3586
Monthly income	3575/4555 (500)	3783/4956 (700)	0.3736

SD, standard deviation. * The p value was calculated using Student's t statistic since the distribution was normal.

In the present investigation refer asself-medication reason that lThe symptoms were not severe and became a risk factor (OR15.87; CI 8.93-28.21; p. 0.0000), statistically significant results; and are shown in Table 3.

In patients who reported having knowledge as a reason for self-medication, the risk of self-medication rose significantly to 10 (OR10.17; CI 5.62-18.40; p. 0.0000); almost similar results were obtained when the family was the environmental influence (OR 9.26; CI 5.74-16.91; p. 0.0000).

Friends as an environmental influence increased the risk of self-medication to six (OR6.26; CI 5.85-11.06; p. 0.0000), statistically significant results.

Patients who reported media as an environmental influence (OR3.71; IC 2.23-6.17; p. 0.0000) and lack of time as a reason for self-medication (OR3.11; CI 1.82-5.31; p. 0.00020)

presented three times more risk of self-medication than those without these factors, statistically significant results.

In the present study, low monthly income and single marital status, despite having OR values greater than 1, were not statistically significant, and therefore did not constitute risk factors. On the other hand, female sex, low educational level, age ≥ 65 years, and working status (employee) did not constitute risk factors, with OR values less than one.

Table 3. Results of the bivariate analysis of the variables under study.

Variable	OR	p	95% CI	
			Lower	Superior
MA.The symptoms were not serious	15.87	0.0000	8.93	28.21
MA.Consider having knowledge	10.17	0.0000	5.62	18.40
IE.Familiar	9.26	0.0000	5.74	16.91
IE. Friend	6.26	0.0000	5.85	11.06
IE.Media	3.71	0.0000	2.23	6.17
MA.Lack of time	3.11	0.0000	1.82	5.31
Low monthly income	1.31	0.3736	0.77	2.21
Marital status (single)	1.06	0.8604	0.53	2.10
Female sex	0.92	0.8550	0.57	1.49
Low level of education	0.80	0.6629	0.39	1.63
Age ≥ 65 years	0.77	0.3586	0.48	1.25
Work activity (worker)	0.73	0.2493	0.45	1.18

Symbolism:MA. Reason for self-medication, IE. Influence of the environment.

The multivariate analysis performed (Table 4) showed that the reasons for self-medication (lack of time, considering having knowledge or personal experience, and reporting that the symptoms were not serious) and the influence of the environment (family, friends, and the media) were the factors associated with self-medication in patients who made up the sample.

Table 4. Multivariate analysis.

Indicators	B	ET	Wald	Next.	OR	95% CI for OR	
						Lower	Superior
MA: lack of time	1,391	0.164	51,867	0.002	3,241	2,040	4,223
IE. Media	1,293	0.164	61,867	0.000	3,643	2,640	5,027
MA. The symptoms were not severe.	1,713	0.634	8,174	0.002	6,200	1,760	21,100
MA. Consider having knowledge	1,812	0.634	6,174	0.004	6,120	1,768	21,189
IE. Friend	1,966	0.476	4,115	0.043	3,811	1,500	6,968
IE. Family	1,715	0.647	44,944	0.031	4,484	2,512	6,092
Constant	-0.730	0.446	2,681	0.102	0.482		

Discussion

Self-medication with NSAIDs is a current public health problem associated with multiple factors. It has become a common and constantly increasing practice, manifesting itself as a form of self-care, in which people are unaware of the long-term side or adverse effects.

The prevalence of self-medication is high, it is higher in women, however, Ayamamani, (11) in his study did not consider it a factor associated with self-medication, similar to what was found in the present investigation.

For his part, Estrada (12) in his research reports that sociodemographic factors and personal factors were not related. Within the cultural factors, currently consuming NSAIDs and whether they are generic or branded are associated with self-medication.

The results of the present study differ from those reported by Gómez (13), who reported that there is an association between self-medication with NSAIDs and sex, educational level, monthly income, alcohol consumption, occupation, degree of pain, social and media influence. No association was found between self-medication with NSAIDs and age, marital status and physical activity. This may be related to the characteristics of the sample included.

This is consistent with what has been reported in the literature, which suggests that self-

medication is a combination of several economic, cultural, and social factors. (14,15) These factors can be categorized as personal, economic, cultural, and social. The most influential factors are lack of time to see a doctor, socioeconomic and cultural factors, factors associated with the pharmaceutical industry, legal implications, and authorities. (14,16)

Personal factors that support self-medication include self-awareness of symptoms, recommendations from a third party, and discontinuation of treatment when symptoms diminish and health improves without medical supervision. (9,14)

Ayamamani, (11) in his study documented that the most important causes were the recommendation by third parties, lack of time and not requiring a prescription at the time of purchase; similar to what was found in the present study.

It's worth mentioning that people's perception of the severity of their symptoms is what motivates them to self-medicate. They perceive the signs and symptoms they experience as being too mild to warrant seeking medical attention, so they choose to purchase medication on the informal market.

The cultural factor is defined as the traditional way of establishing medical treatment, which is rooted in customs and is implemented in the daily activities of the population. Cultural factors include the knowledge acquired during one's personal life, the individual's level of education, social group affiliation, and living in rural or urban areas; although these factors were not examined in the present research.

It is important to highlight that mass media, while influential, are not as decisive as those mentioned above. (14) However, in this research, internet use was associated with self-medication with NSAIDs.

Gómez, (13) believes that the economic factors that justify self-medication are based on acquiring medicines in private pharmaceutical offices; receiving information from the staff of said entity; although in our country there are no such offices, it is notable to highlight the presence of an informal market that sells medicines imported by people for profit.

It is worth highlighting that the social factor is related to social groups, these are groups of individuals who relate to each other, having similar qualities, there is a correspondence of reciprocity between the members, which generates a bond of unity in which values are cultivated. Due to the bond that relates them, they receive advice when treating symptoms ignoring the potential risk of self-medication, people within their environment, both family members and friends, who find information on multiple topics, whether these are professionals or not, can influence our decision to go to a specialized center or simply go to a pharmacy. (12-14)

Conclusions

The present study clearly identified the factors associated with self-medication in dental services. Female patients accounted for 44.23% of the patients, and 53.02% were workers. Lack of time, considering themselves to have knowledge or experience, reporting that their symptoms were not serious, and environmental influences contributed significantly to self-medication. The risk of self-medication was significant among patients who considered their symptoms to be mild, those who reported having knowledge, and those influenced by their environment (friends and the media).

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Conflict of interest

The authors declare that there are no plagiarism, conflicts of interest or ethical conflicts.

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