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SELF-MEDICATION AND ASSOCIATED FACTORS AMONG ADULT OUTPATIENTS IN A MEXICAN CLINIC: A CROSS-SECTIONAL STUDY

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ABSTRACT

Backgraund: Self-medication is the highly prevalent activity in which patients obtain and use medications or treatments without the doctor's participation either in the prescription or in the supervision of the treatment. **Objectives:** To determine the prevalence and characteristics of self-medication (SM) and the sociodemographic and health factors associated with SM in adult patients attending a Mexican ambulatory care center. **Methods:** A case report form (CRF) was used to collect individual patient data through direct interviews. The CRF collected data by asking questions about patient sociodemographics, self-medication, patient characteristics, and related factors. **Results:** A total of 5160 adult patients were included in the analysis. Of these, 2571 (49.8%) were female. The patients had a mean (M) age (± standard deviation: SD) of 34.6 (14.8) years. SM was reported by 1278 (24.8%) patients. The main clinical reasons for outpatient SM were COVID-19, headache/migraine and disease prevention. Of the 1344 products identified for SM, 971 (72.2%) were conventional medicines (CM), with nonsteroidal anti-inflammatory drugs (NSAIDs) being the main group, and 373 (27.8%) were complementary or alternative medicines (CAM), with chamomile infusion being the most commonly used CAM. **Conclusion:** A significant prevalence of SM was found. COVID-19 is the main clinical condition, with NSAIDs/analgesics and chamomile being the main

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products used. SM products were obtained from pharmacies/stories and leftover medicines. It is highly recommended to increase the knowledge of the rational use of medications.

KEYWORDS: Complementary and alternative medicine; Conventional medicine; Mexico; Outpatient; Prevalence; Self-medication.

AUTOMEDICACIÓN Y FACTORES ASOCIADOS EN PACIENTES AMBULATORIOS ADULTOS DE UNA CLÍNICA MEXICANA: UN ESTUDIO TRANSVERSAL

RESUMEN

Antecedentes: La automedicación es una actividad altamente prevalente en la que los pacientes obtienen y usan medicamentos o tratamientos sin la participación del médico, ya sea en la prescripción o en la supervisión del tratamiento. **Objetivos:** Determinar la prevalencia y características de la automedicación (AM) y los factores sociodemográficos y de salud asociados a la AM en pacientes adultos que acuden a un centro de atención ambulatoria mexicano. **Métodos:** Se utilizó un formato de reporte de caso (FRC) para recopilar datos individuales de los pacientes mediante entrevistas directas. El FRC recopiló datos al hacer preguntas sobre la sociodemografía del paciente, la automedicación, las características del paciente y los factores relacionados. **Resultados:** Se incluyeron en el

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análisis un total de 5160 pacientes adultos. De estos, 2571 (49.8%) eran mujeres. Los pacientes tenían una edad media (M) (± desviación estándar: DE) de 34.6 (14.8) años. La AM fue reportada por 1278 (24.8%) pacientes. Las principales razones clínicas para la AM ambulatoria fueron COVID-19, dolor de cabeza/migraña y prevención de enfermedades. De los 1344 productos identificados para AM, 971 (72,2%) fueron medicamentos convencionales (MC), siendo los antiinflamatorios no esteroideos (AINEs) el grupo principal, y 373 (27,8%) fueron medicamentos complementarios o alternativos (MCA), siendo la infusión de manzanilla la MCA más utilizada. **Conclusión:** Se encontró una prevalencia significativa de AM. COVID-19 fue la principal condición clínica, siendo los AINEs/analgésicos y la manzanilla los principales productos utilizados. Los productos de AM se obtuvieron de farmacias/tiendas y medicamentos sobrantes. Es muy recomendable aumentar el conocimiento del uso racional de los medicamentos.

PALABRAS CLAVE: Medicina complementaria y alternativa; Medicina convencional; México; Paciente ambulatorio; Prevalencia; Automedicación.

INTRODUCTION

Self-medication (SM) is the use of nonprescribed medicines by individuals to treat self-identified disorders or symptoms (1,2). Conventional medicine (CM) self-medication can include the use of over-the-counter (OTC) medications available through pharmacies without a

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doctor's prescription, the irregular use of a prescribed medication, typically for chronic or intermittent conditions, or the use of leftover medications from previous prescriptions (1,2). SM also includes the use of a wide range of complementary and alternative medicine (CAM), such as biologically based practices, energy therapies, manipulative and body-based methods, and mind-body medicine (1-4). The use of botanicals (herbal products made from leaves, roots, stems, seeds, pollen, or any other part of a plant), animal-derived extracts, prebiotics, and probiotics is a biologically based practice (3). It is important to note that complementary treatments are used along with CM, while alternative treatments are generally used instead of CM (1,2). The prevalence of SM ranges from 8% to 98% (1,5-7).

Relatives, friends, neighbors, the pharmacist, previously prescribed drugs, or suggestions from advertisements in informational sources such as newspapers, magazines, radio, or television are common sources of information for SM. There are several factors that favor SM, such as self-care, lack of time, lack of health services, financial limitations, ignorance, misconceptions, extensive advertising, and easy availability of medicines (1,6,7). There are advantages to SM, such as saving scarce medical resources, reducing absenteeism from work and school, and reducing pressure on medical services. However, several disadvantages have also been reported, such as the presence of

side effects, drug–drug and drug-food interactions, antimicrobial resistance, lack of efficacy, risk of addiction or misuse, and inaccurate self-diagnosis. In this case, SM may increase wasteful public expenditure and/or make the disease more prevalent (1,6,8).

SM is a serious global problem, and Mexico is no exception. A multicentric study in 11 Latin American cities showed that 54.6% of the population studied had been self-medicated in the last 2 weeks, and 62.58% had been self-medicated in the last 3 months (9). A relatively recent systematic review of SM in the Mexican population showed a prevalence of 42.3% for CM and 30.7% for CAM (7). Three reports of SM during the COVID-19 pandemic in the Mexican population were published. One study evaluated SM in patients with symptoms associated with anxiety and depression (10). This study revealed a prevalence of herb use of 61.9% and concomitant use of drug-herb combinations in 25.3% of the interviewed patients (10). The second study evaluated the ability of SM to prevent SARS-CoV-2 infections and reported a 42.9% prevalence of allopathic and/or complementary medicine use (11). The third study included university students and reported a SM of 26% with the intention of preventing COVID-19 infection (12). Within the design of the first two studies, the application of online surveys to obtain data is mentioned. However, the mechanics of contact of the participants were not mentioned. As mentioned by the authors, their results

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may not represent the entire Mexican population because there are regions without internet access and very low socioeconomic status, which may lead to demographic selection bias. Likewise, their evaluations were self-reported by the participants, which might not represent actual practices. Then, the probability of a bias in the information obtained may be high. Therefore, the main objective of the present study was to determine, through direct interviews, the prevalence of SM, the characteristics of SM, and the sociodemographic and health factors that favor SM in adult patients attending a Mexican ambulatory care center.

Methodology

Study Design

The objective of this study was to evaluate the use of SMs (CM and CAM) in adult patients attending a Mexican ambulatory care center. A prospective, descriptive, analytical, and cross-sectional study was conducted to evaluate the frequency of SMs (CM and CAM) among patients in the outpatient clinic. The investigation was conducted from August 2022 to September 2023 in an ambulatory care center located in the interior of the state of Hidalgo, Mexico.

Study population

Participants who met the following criteria were included: were over 17 years of age, were outpatients for general medical consultation, were conscious,

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were able to respond appropriately to questions from medical staff, and voluntarily agreed to participate in the study. The exclusion criteria were refusal to participate and not undergoing a general medical consultation. A sample of 5160 adult patients had complete data and were included in the analyses. The Mexican ambulatory care center where the study was conducted provides medical consultation services to patients of all ages and includes diagnostic, laboratory, radiographic, observation, treatment, minor surgery, psychotherapy, and rehabilitation services. Patients were contacted at the end of their general medical consultation, the purpose of the research was explained, and they were invited to participate in the study. Written informed consent was obtained from patients who agreed to participate in the study.

Measurement instrument and data collection

A case report form (CRF) was used to collect the individual patient data required for the study. The CRF collected data by asking questions about patient sociodemographics, self-medication, patient characteristics, and related factors. SM was defined as the use of nonprescribed medicines by individuals to treat self-reported disorders or symptoms in the past six months.[7] SM also includes the use of a wide range of complementary and alternative medicine (CAM), such as biologically based practices, energy therapies, manipulative and body-based methods, and mind-body

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medicine.[7] The use of botanicals (herbal products made from leaves, roots, stems, seeds, pollen, or any other part of a plant), animal-derived extracts, prebiotics, and probiotics is a biologically based practice.

Ethical aspects

An independent ethics committee from the Institute of Health Sciences (IHS) of a Mexican university approved the study protocol, and the study was conducted in accordance with the tenets of the Declaration of Helsinki. The Ethics Committee registration code was: CEEI-2020-001.

Variables considered and statistical analysis

The data were entered into a computerized database. SPSS version 24 for Windows (SPSS Inc., Chicago, IL, USA) was used for descriptive and inferential statistical analyses. The numerical variable age is presented as the mean and standard deviation (SD). The following sociodemographic, health status, and SM characteristic variables were analyzed as categorical variables: sex, civil status, socioeconomic level, location type, scholarship, medical service affiliation, personal perception of health, limitation of activities for disease, smoking, intake of alcoholic beverages, suffering from any allergies, arterial hypertension, diabetes mellitus, cancer diagnosis, SM, time of SM use, number of SM administrations per day, efficacy of SM, knowledge of SM products, form of product acquisition, and reasons for SM. Categorical variables are presented as frequencies and percentages. SM was

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analyzed using logistic regression analysis. SM was the dependent variable, and some sociodemographic and health status variables were potential predictors. Logistic regression analysis with the enter method was used for binary and multiple analyses. The significance level was set at $p < 0.05$.

Results

Participants

A total of 5160 adult patients were included in the analyses. Of these, 2571 (49.8%) patients were female, and 2589 (50.2%) were male. The patients had a mean (M) age (± standard deviation: SD) of 34.6 (14.8) years.

Self-medication and sociodemographic and health status data

Self-medication was reported by 1278 (24.8%) of the patients. Of these patients, only 66 (5.2%) mentioned a second product for SM. The associations among sociodemographic characteristics, health status and self-medication are shown in Table 1. A statistically significant association ($p<0.05$) was demonstrated with sex, socioeconomic level, location type, education level, personal perception of health, limitation of activities for disease, suffering from any allergies, arterial hypertension, diabetes mellitus, and cancer diagnosis. These latter variables were taken into account for the binary and multiple logistic regression analyses. Table 2 shows the influence of

independent factors for self-medication according to logistic regression analysis.

Table 1 Association between sociodemographic characteristics and self-medication (n=5160)

	Total n= 2.157	Self-medication	Non-self-medication	P value
Age (years, media ± SD)	34.6 ±14.8	34.4 ±13.6	34.7 ±15.2	0.542
Female (n, %)	2571 (49.8)	682 (26.5)	1889 (73.5)	0.004
Male (n, %)	2589 (50.2)	596 (23.0)	1993 (77.0)	
Civil status				
Married or free union (n, %)	2333 (45.2)	547 (23.4)	1786 (76.6)	0.075
Single (n, %)	2620 (50.8)	684 (26.1)	1936 (73.9)	
Separated or widowed (n, %)	207 (4.0)	47 (22.7)	160 (77.3)	
Socioeconomic level				
Low (n, %)	731 (14.2)	146 (20.0)	585 (80.0)	0.001
Medio (n, %)	3366 (65.2)	810 (24.1)	2556 (75.9)	
High (n, %)	1063 (20.6)	322 (30.3)	741 (69.7)	
Location type				
Rural (n, %)	407 (7.9)	120 (29.5)	287 (70.5)	0.022
Urban (n, %)	4753 (92.1)	1158 (24.4)	3595 (75.6)	
Scholarship				
Basic and secondary (n, %)	1430 (27.7)	299 (20.9)	1131 (79.1)	0.001
Degree (n, %)	1850 (35.9)	437 (23.6)	1413 (76.4)	
Postgraduate (n, %)	1880 (36.4)	542 (28.8)	1338 (71.2)	
Medical service affiliation				
No affiliation (n, %)	2239 (43.4)	565 (25.2)	1674 (74.8)	0.496
With affiliation (n, %)	2921 (56.6)	713 (24.4)	2208 (75.6)	
Personal perception of health				
Very good (n, %)	351 (6.8)	57 (16.2)	294 (83.8)	0.001
Fair to good (n, %)	4160 (80.6)	1015 (24.4)	3145 (75.6)	
Poor to fair (n, %)	649 (12.6)	206 (31.7)	443 (68.3)	
Limitation of activities				
No (n, %)	4530 (87.8)	1041 (23.0)	3489 (77.0)	0.001
Yes (n, %)	630 (12.2)	237 (37.6)	393 (62.4)	

Smoking				
Negative (n, %)	4096 (79.4)	996 (24.3)	3100 (75.7)	0.057
Occasional (n, %)	938 (18.2)	240 (25.6)	698 (74.4)	
Diary (n, %)	126 (2.4)	42 (0.8)	84 (1.7)	
Intake of alcoholic beverages				
No (n, %)	3363 (65.2)	830 (24.7)	2533 (75.3)	0.843
Yes (n, %)	1797 (34.8)	448 (24.9)	1349 (75.1)	
Suffer from any allergies				
No (n, %)	4654 (90.2)	1091 (23.4)	3563 (76.6)	0.001
Yes (n, %)	506 (9.8)	187 (37.0)	319 (63.0)	
Arterial hypertension				
No (n, %)	4808 (93.2)	1209 (25.1)	3599 (74.9)	0.020
Yes (n, %)	352 (6.8)	69 (19.6)	283 (80.4)	
Diabetes mellitus				
No (n, %)	4880 (94.6)	1226 (25.1)	3654 (74.9)	0.014
Yes (n, %)	280 (5.4)	52 (18.6)	228 (81.4)	
Cancer diagnosis				
No (n, %)	5133 (99.5)	1265 (24.6)	3868 (75.4)	0.005
Yes (n, %)	27 (0.5)	13 (48.1)	14 (51.9)	

Table 2 The influence of independent factors for Self-medication in participants (n=5160)

	Binary logistic regression analysis			Multiple logistic regression analysis		
Variables	OR	95% CI	*p* Values	OR	95% CI	*p* Values
Sex (women)	1.207	1.064-1.370	0.004	1.115	0.978-1.272	0.103
Civil status (Married or free union)						
Single	1.154	1.013-1.313	0.031	1.083	0.938-1.249	0.276
Separated or widowed	0.959	0.683-1.346	0.809	0.870	0.609-1.244	0.445
Socioeconomic level (Low)						

Medio	1.270	1.042-1.547	0.018	1.203	0.973-1.487	0.087
High	1.741	1.392-2.177	0.001	1.477	1.143-1.909	0.003
Location type (Rural)	1.298	1.038-1.623	0.022	1.464	1.159-1.850	0.001
Scholarship (Basic)						
Degree	1.170	0.990-1.382	0.065	1.139	0.947-1.371	0.166
Postgraduate	1.532	1.303-1.802	0.001	1.381	1.133-1.683	0.001
Perception of health (Very good)						
Fair to good	1.665	1.243-2.230	0.001	1.736	1.290-2.336	0.001
Poor to fair	2.398	1.727-3.331	0.001	2.646	1.868-3.750	0.001
Limitation of activities (Yes)	2.021	1.696-2.409	0.001	1.873	1.556-2.255	0.001
Suffer from any allergies (Yes)	1.914	1.579-2322	0.001	1.751	1.435-2.136	0.001
Arterial hypertension (Yes)	0.726	0.553-0.952	0.021	0.682	0.505-0.921	0.013
Diabetes mellitus (Yes)	0.680	0.500-0.925	0.014	0.639	0.454-0.897	0.010
Cancer diagnosis (Yes)	2.839	1.331-6.056	0.007	3.308	1.484-7.372	0.003

OR: odds ratio; 95% CI: 95% confidence interval.

Factors associated with and characteristics of self-medication

The main clinical conditions and products used for outpatient self-medication are shown in Figures 1 and 2. The main reasons for outpatient self-medication were COVID-19, headache/migraine, disease prevention and musculoskeletal pain (Figure 1).

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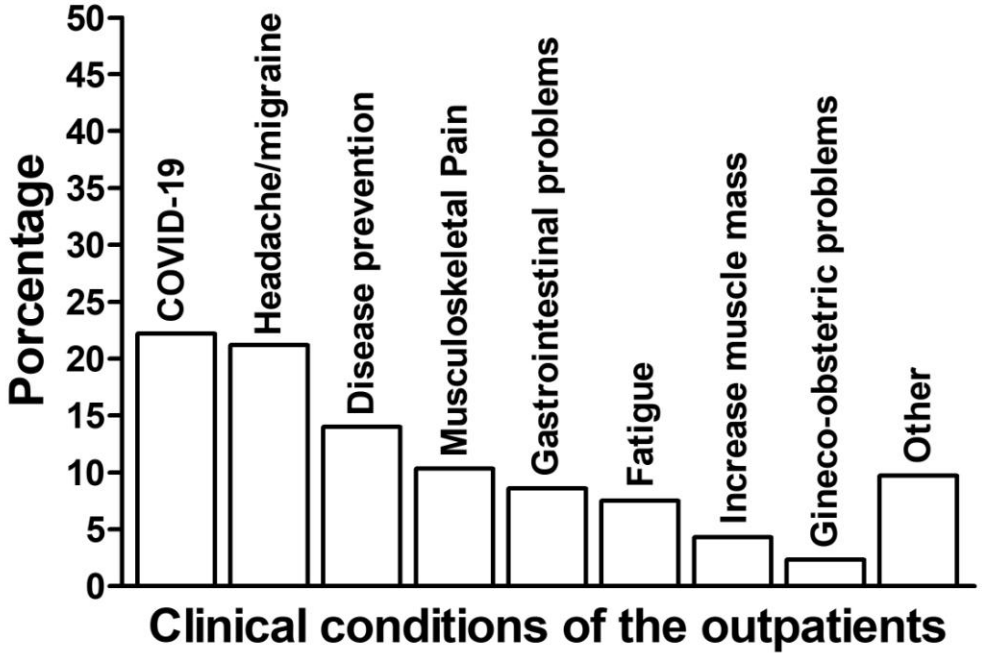

Figure 1. Principal clinical conditions of outpatients (n = 1,278)

SM was performed in 1212 patients with one product and in 66 patients with two products. In total, 1344 SM products were used by 1278 patients. Of the 1344 products for SM that were identified, 971 (72.2%) were conventional medicines, and 373 (27.8%) were complementary or alternative medicines. As many products or presentations for self-medication contain more than one substance or drug, the final number of products for SM in the register was 1711, with an average of 1.34 per patient. The main products used for SM by outpatients were analgesics/nonsteroidal anti-inflammatory drugs, vitamins/supplements and herbal derivatives (Figure 2). Paracetamol (n=324, 55.4%), acetylsalicylic acid

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(n=110, 18.8%), ibuprofen (n=54, 9.2%), naproxen (n=40, 6.8%) and diclofenac (n=36, 6.2%) were the main analgesic/nonsteroidal anti-inflammatory drugs used for SM. Ascorbic acid (n=81, 16.1%), thiamine (n=75, 14.9), pyridoxine (n=75, 14.9), cyanocobalamin (n=75, 14.9%), and whey (n=41, 8.2%) were the most commonly used vitamins/supplements for SM. Chamomile (n=53, 14.7%), lemon (n=36, 10%), ginger (n=33, 9.1%), garlic (n=29, 8.0%), and cinnamon (n=25, 6.9%) were the most commonly used herbal products for SM.

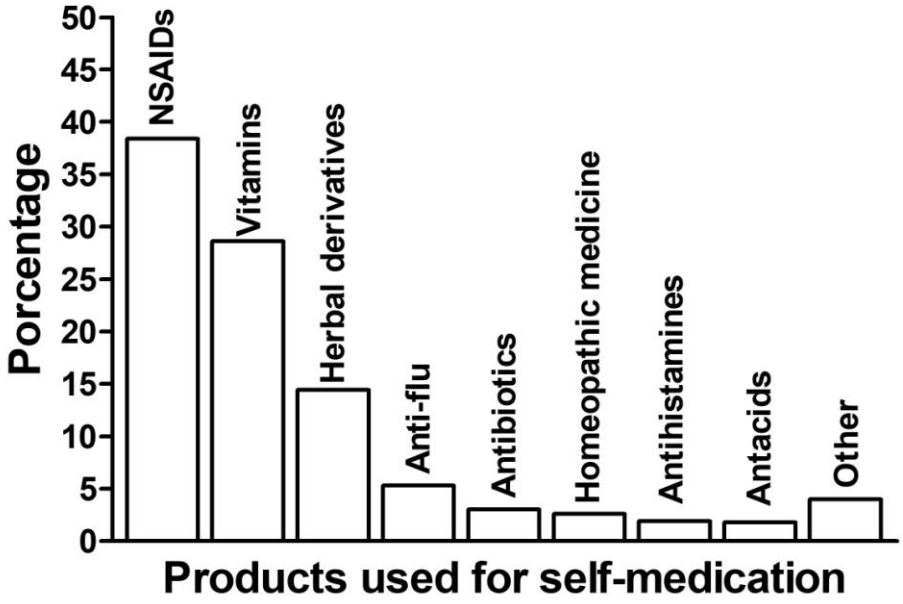

Figure 2. Main products used for self-medication by outpatients (n = 1,278)

In the case of COVID-19, 546 products used for SM were identified, with an average of 1.83 per patient. Paracetamol (n=131, 24%), clorfeniramine (n=65, 11.9%), phenylefrin (n=53, 9.7%) and lemon (n=30, 5.5%) were the most commonly used products for self-medication in these patients.

The main time of use of self-medication, number of administrations per day, efficacy of the self-medication used, information about the products, form of product acquisition and reasons for self-medication are shown in Table 3.

Table 3 Characteristics related to self-medication carried out by patients in the outpatient clinic (n=1278)

Characteristic of self-medication	n (%)
Time of use of self-medication	
1 to 3 days	772 (60.4)
4 to 7 days	129 (10.1)
More than seven days	377 (29.5)
Times of administration per day	
One	977 (76.4)
Twice	181 (14.2)
three or more times a day	120 (9.4)
Did the medication help you solve your discomfort or problem?	
None	35 (2.7)

Little to regular	484 (37.9)
Much to complete	759 (59.4)
How did you find out about the product?	
Family and/or friends	473 (37.0)
Prior prescription	371 (29.0)
Patient's own knowledge	206 (16.1)
Media (TV, internet, etc.)	93 (7.3)
Other health professionals	81 (6.3)
Pharmacy salesman	54 (4.2)
Form of product acquisition in self-medication	
Direct purchase in pharmacy or stores	889 (69.6)
Previous prescription/house	344 (26.9)
Friends/neighbors/family	45 (3.5)
Reasons for self-medication	
Recommendation by others	601 (47.0)
Knowledge, prior experience or prior prescription	499 (39.0)
Easy to buy	85 (6.7)
It's just a mild illness	59 (4.6)
Lack of doctor near residence	20 (1.6)
Save money	14 (1.1)

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Discussion

A total of 5160 adult patients were included in the study, of whom 1278 reported SM, for a prevalence of 24.8%. The main clinical reasons for outpatient SM were COVID-19, headache/migraine and disease prevention. Of the 1344 products identified for SM, 971 (72.2%) were conventional medicines (CM), with nonsteroidal anti-inflammatory drugs (NSAIDs) being the main group, and 373 (27.8%) were complementary or alternative medicines (CAM), with chamomile infusion being the most commonly used CAM.

As noted above, the prevalence of SM in Mexico ranges from 6.1 to 100% (7). We found an SM prevalence of 24.8%. This prevalence of SM in the present study is lower than the prevalences of 54% and 62% in Latin American cities (9). Similarly, the prevalence of 24.8% found in this study is lower than that reported in the population of eight studies from the same Mexican region (Hidalgo State), which ranged from 54.2% to 87.6%, with an average SM of 66.2% (7). Nevertheless, only two of the aforementioned studies used populations similar to our population (outpatients) and reported prevalences of SM of 87.6 and 86.4% (13,14). However, in one of these studies, the temporal variable SM was not included (14), and in another, SM was divided into several temporal blocks (13). In this case, it is necessary to homogenize the questionnaires to adequately compare SM among different populations.

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There are personal, sociodemographic and health status aspects of people involved in SM, such as age, gender, socioeconomic status and educational level. In the present study, female sex, high socioeconomic status, living in a rural community, having a postgraduate education, poor health perception and having any allergies were found to be risk factors for SM. Our findings are consistent with those of previous studies that revealed a relationship between greater SM use and higher income and education levels, female gender, and rural residence (15-18). However, our results are not consistent with SM findings in other populations where living in an urban area and having a lower level of education favors SM (17,19). The differences found may be due to the cultural and economic characteristics of the populations studied and the public policies related to SM.

In our study, COVID-19 infection or involvement, migraine/headache, disease prevention, musculoskeletal pain and gastrointestinal disorders were the main conditions reported in the SM. These main conditions are somewhat consistent with the main clinical conditions found in the systematic review of SM in the Mexican population, which include, in order of frequency, acute respiratory infection or affection, gastrointestinal affection or diarrhea, influenza or similar affection, and headache (7). In this sense, we found that NSAIDs/analgesics were the main products used by patients in SM. Our results are largely consistent with various global and local studies on the use

of these drugs as the main products used in SM (7,9,16-18,20-21). In general, NSAIDs have anti-inflammatory, analgesic and antipyretic effects and are therefore used to relieve fever and general discomfort in patients with respiratory, infectious or painful diseases. These effects of NSAIDs are mainly due to the inhibition of prostaglandin production. The hepatic, renal, gastrointestinal, and cardiovascular adverse effects of NSAIDs are well known (22). Similarly, a study revealed that NSAIDs are among the most commonly used medications for self-harm in emergency department visits (23). It is therefore widely recommended that patients reduce the use of these drugs.

Society is composed of people who interact on a daily basis with some level of trust, whether between peers or between groups of people. Building trust is an important step in developing quality interactions and relationships. The average person has little knowledge about health care (24). Therefore, to manage any disorder or illness, people we trust (health professionals, family or friends) for advice on how to treat or reduce these ailments (24). For this reason, recommendations from other people (family, friends, and some health personnel) were the main source of information and the main reason for highlighting SM in the present study. A previous study in the Indian population revealed that the main sources of information about SM medications were pharmacists and family members (18). In a systematic review of SM in Mexico, the

recommendation of neighbors/relatives was among the additional important factors for performing SM (7). In the same sense, previous experience or previous prescription were among the main sources of information and the main reasons for using SM products in the present study. This last result is in line with previous studies that considered patients' previous experience and/or familiarity with treatments as the main justification for SM (7,20,21). In this sense, it is highly recommended that patients consult a health care professional before using any medication or herbal product for SM.

SM can be performed with leftover medications from previously prescribed treatments, with medications or products given as gifts by close people (relatives or friends), or by purchasing OTC medications that are very easily accessible in shopping centers or pharmacies (25). It is very difficult for healthcare professionals to control the first option above. However, in the case of OTC medications, the pharmacist plays the role of educator and guide for the consumer (25). In the present study, the main sources of SM products were direct purchases from pharmacies or shopping centers (69.6%) and previously prescribed products or because these products or medicines were at home (26.9%). These results have been observed in other studies (21,26). In the case of OTC medicines, as mentioned above, the role of the salesperson or pharmacist in guiding and educating patients about the rational and appropriate use of medicines

intended for SM is very important. The drug sales team can positively influence consumer decisions and provide important information about drugs (precautions, dosage and dosage intervals, interactions with other drugs or food, adverse reactions, etc.) (27). Despite campaigns to promote the rational use of medicines, keeping leftover medicines at home or at work is a common practice (28). In general, the practice and custom of keeping medicines at home leads to the irrational use of medicines, encouraging self-medication and accidental and intentional poisoning (28,29). The storage of leftover medications occurs due to sociocultural factors, the habit of hoarding, and the lack of programs for the disposal of unused or expired medications. As a result, a high percentage of the population mishandles unused, leftover, or expired medications (28,29). In this sense, more restrictions on the prescription and dispensing of medicines by health authorities and public programs on the use and proper disposal of medicines are needed.

Limitations

Our study has several limitations. First, a 6-month period was used to report the use of SM products. In this sense, there is no general consensus on the temporality of SM that should be used to evaluate its frequency or prevalence. While some studies evaluate SM over a period of 1 month (15) or 3 months (9), other studies use 1 year (17,18), and others do not consider the duration of SM (5-8,12,16). For this reason, the temporality of SM

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needs to be taken into account in subsequent prevalence studies, including systematic reviews and meta-analyses. Another limitation of our study was the lack of registration of adverse reactions due to the products used in SM. All medicines cause adverse reactions to a greater or lesser extent, so there is an underreporting of these reactions because the population that self-medicates does not visit health services to report them (20,23). In this sense, the community pharmacist could again inform the population that purchases medicines for SM to return to report likely adverse reactions if they occur (27,30).

Conclusions

A significant prevalence of SM was found. COVID-19 and headache were the main clinical conditions associated with the use of SM. NSAIDs/analgesics, vitamins and chamomile are the main products used in SM. The remaining medications from previous treatments were sources for performing SM. It is highly recommended that knowledge about the rational use of medications for SM be increased.

Data transparency

The research data from this study will be made available by emailing the corresponding author.

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