

Self-medication in pharmacies in the town of Sidi-Bel-Abbés (Algeria): An epidemiological and medico-legal study

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Summary:

Self-medication is a practice that is increasingly encouraged in today's society. It is justified by the economic context, medical demographics and the need to empower patients. But if it is misused, it can expose patients to risks. A patient-pharmacist-doctor exchange is therefore necessary. The aim of this study is to determine the epidemiological and medico-legal aspects of this practice in the population of Sidi-Bel-Abbès (Algeria).

Materials and methods: survey of 76 dispensing pharmacists, from December 2022 to March 2023.

Results: Self-medication is a fairly widespread phenomenon in the town of Sidi-Bel-Abbès (Algeria), mainly in populated areas. In most cases, medicines are dispensed by the shop assistant, who is unable to assess the consequences of this practice. The majority of pharmacists are present in the dispensary, which means that patients can be properly informed and the consequences of self-medication can be kept to a minimum. The class of drugs used for self-medication varies depending on the period and the town. Painkillers account for the majority, followed by antibiotics, cough suppressants and non-steroidal anti-inflammatories. Flu and headaches account for the majority, followed by angina, gastric diseases and dermatological diseases. Among the most frequently reported consequences are misuse of medicines and delays in diagnosis.

Conclusion: Self-medication is a worldwide phenomenon, and its practice represents a danger for the patient. It is a fairly significant phenomenon in the town of Sidi-Bel-Abbès (Algeria). An awareness-raising program is needed to set limits to its scope, especially in collaboration with dispensing pharmacists because of their direct contact with patients.

Key words: Self-medication, Pharmacy pharmacist, Medicines concerned, Diseases, Pharmacist behavior

Introduction

Self-medication has become a "fashionable habit" that more and more people are practising. People try to find out the nature of the illness that affects them while trying to diagnose it and find the appropriate remedy to cure or prevent it without consulting a doctor. According to the World Health Organisation (WHO) (1,2), self-medication is when an individual uses a medicine, on their own initiative or that of someone close to them, to treat a condition or symptom that they have identified themselves, without consulting a health professional.

Worldwide, more than half of all medicines are prescribed, distributed or sold inappropriately, and half of all patients do not take them correctly. Incorrect use of medicines has harmful effects on patients, resulting in a waste of resources. This incorrect use may take the form of excessive or inappropriate consumption of prescription or over-the-counter medicines.

Self-medication is becoming increasingly common. However, there are few data on the causes of self-medication, its prevalence and the characteristics of the adverse effects associated with this behavior.

Consequently, no pharmacist or member of staff should encourage "direct purchasing" of medicines in their establishment. This is a highly detrimental practice, particularly for the customer. In reality, however, we can see that medicines are often dispensed in pharmacies simply on presentation of a "piece of paper", an old pack of the product requested or sometimes an old prescription.

The aim of this descriptive study is to assess the extent of self-medication based on a survey of pharmacies in the city of Sidi-Bel-Abbès (Algeria). More specifically, the study aims to:

- Identify which medicines are required for self-medication.
- Identify diseases that have been self-medicated.
- How the pharmacist deals with self-medication.
- Propose recommendations.

I. Materials and methods

The study took place in 76 pharmacies in Sidi-Bel-Abbès (Algeria).

Type of study

This is a descriptive study analyzing questionnaires containing information on self-medication in pharmacies in Sidi-Bel-Abbès (Algeria).

The study ran from December 2022 to March 2023.

Study population

The study looked at self-medication in the dispensaries of Sidi-Bel-Abbès (Algeria).

Inclusion criteria: all pharmacies located in the city of Sidi-Bel-Abbès (Algeria) were randomly selected.

Non-inclusion criteria: non-consenting pharmacies were not included in our study.

Sampling

Sample size

The number of subjects required for the survey was calculated using the site's sample size calculator: www.openepi.com.

The data entered are :

- Population size: 123 dispensaries.
- Confidence limit: 05%.

We selected 76 pharmacies in the town of Sidi-Bel-Abbès (Algeria). The pharmacies were chosen at random.

Collection technique

Our study was based on questionnaires from pharmacies in the town of Si Sidi-Bel-Abbés (Algeria). The questionnaire was designed to meet the objectives of our research, based on data from the scientific literature and our questions about the constraints encountered by pharmacies when self-medicating:

A section dedicated to the person dispensing the medicinal product (dispensing pharmacist, salesassistant, student trainee):

- Age.
- Gender

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Respondents are asked to rate on a 4-point Likert-type scale:

- Rarely / never.
- Occasionally.
- Often.
- Almost always / always.

Data entry and analysis

Data was entered as the questionnaires were drawn up. The data was analyzed using IBM SPSS23 (Statistical Package for the Social Sciences).

Quantitative variables are described in terms of their percentage or headcount distribution. Qualitative variables are described by calculating the mean, median and standard deviation.

Ethical considerations.

The questionnaire is anonymous, completed after obtaining the consent of the dispensing pharmacist and informing him or her that there will be no conflict of interest (personal, professional or financial).

II. Result

1-Descriptive epidemiology of the study population

The study involved 76 dispensing pharmacists in the town of Sidi-Bel-Abbès (Algeria).

Socio-demographic characteristics of the study population

In our sample of 76 dispensing pharmacists, there were 30 men and 70 women. The sex ratio was

0.43 men to one woman. The distribution according to age enabled us to make the following observations: The minimum age was 25. The maximum age was 65, with an average of 39.47 years and a standard deviation of 9.175 years. The median age was 29, representing 55%, of whom 69% were male. The age group >30 years represented 59.2% with 58% being male. The age range [30-40] represented 32.9%. The age range [51-60] represents 03.9%. The age range [41-50] and >60 years represent 01.3%. The distribution of cases in our sample according to the location of the pharmacy reveals that the majority of pharmacies are located in a populated area (82%). The distribution of cases in our sample according to the age of the pharmacy noted that the majority of pharmacies were between 01 and 05 years old, representing 46.1%.

2. Distribution of pharmacies according to the status of the dispensing agent: The distribution of cases according to the status of the drug dispenser showed that the pharmacist represents the majority of order 64.5%, followed by the salesperson (19.7%) and the student trainee (15.8%).

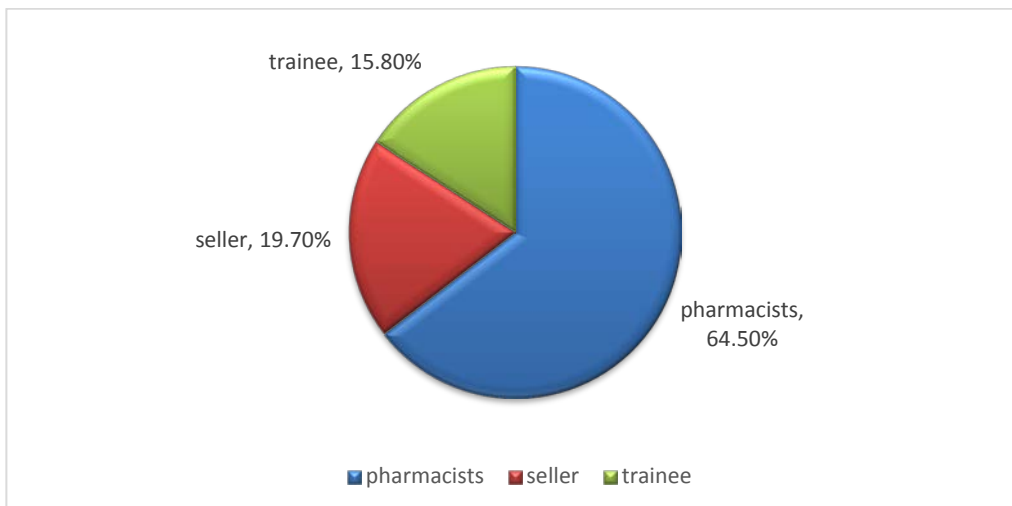


Figure 01: Distribution of pharmacies according to the quality of the dispensing agent.

3. Distribution of pharmacies by class of drug requested: The distribution of cases in our sample according to the drug requested by the patient revealed that analgesics represent the majority (15.3%), followed by antibiotics (13.6%), cough suppressants (13.2%), gastroenterology (12.4%), non-steroidal anti-inflammatory (11.3%), contraceptives (10.3%), antihistamines (9.5%), steroidal anti-inflammatory (5.4%), antiparasitic (3.5%),

others (1.2%).

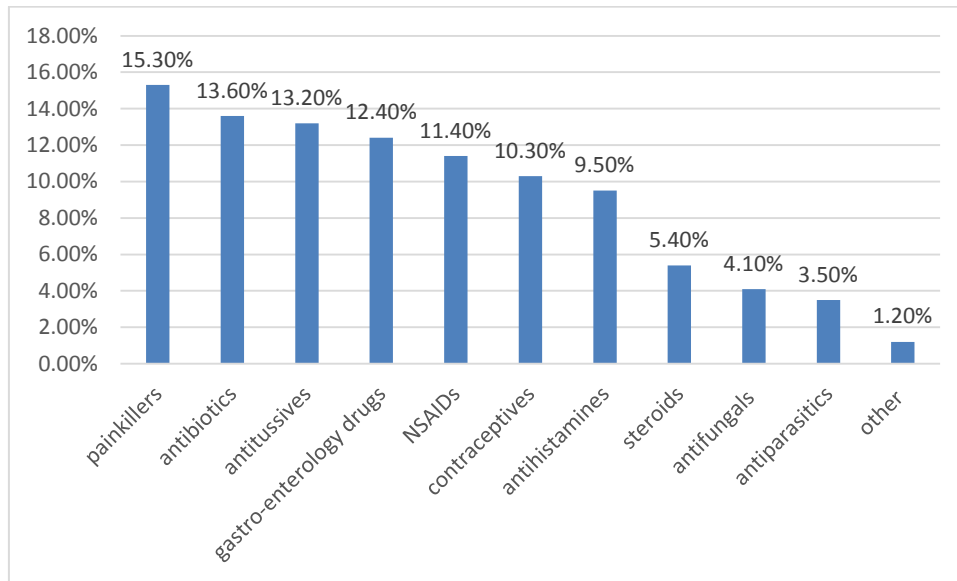


Figure 02: distribution of pharmacies by class of drug requested.

4. Distribution of pharmacies according to self-medication illnesses: The distribution of cases in our sample according to self-medication illnesses showed that influenza and headaches represent the majority, followed by angina and gastric illnesses, dermatological illnesses and, lastly, ENT and gynecological illnesses.

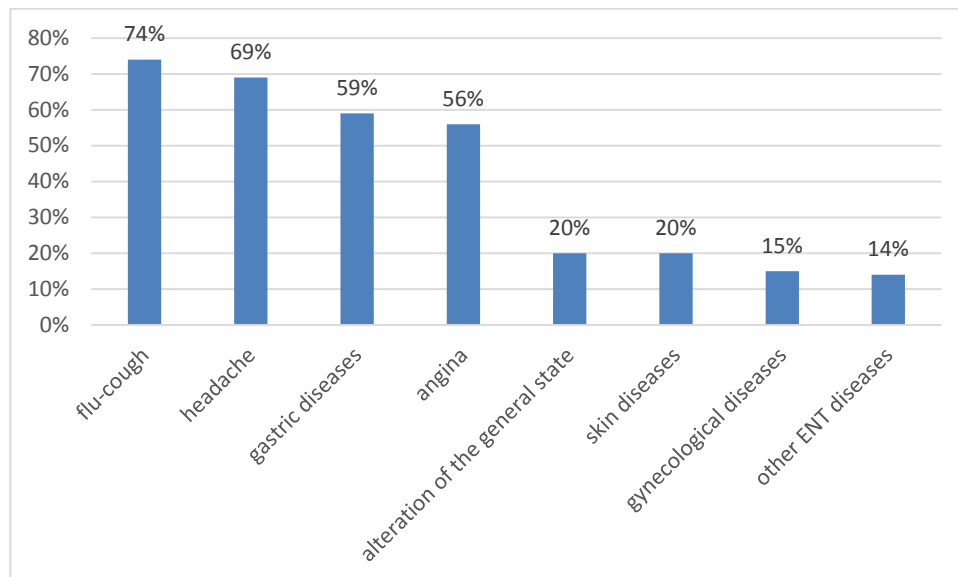


Figure 03: Distribution of pharmacies according to self-medication diseases.

The distribution of cases in our sample according to the sources of drug knowledge review revealed that Vidal represents the majority (45.8%), then Chiffa Officine; an intelligent application developed professionally to better manage the pharmacy intended for Algerian pharmacists (32.20%), and others represent (22%).

5. Distribution of cases according to side-effects: The distribution of cases in our sample according to side-effects following self-medication revealed that side-effects occurring occasionally following self-medication accounted for 36%.

6. Breakdown of cases according to the pharmacist's attitude towards self-medication: The breakdown of cases according to the pharmacist's attitude towards self-medication revealed that

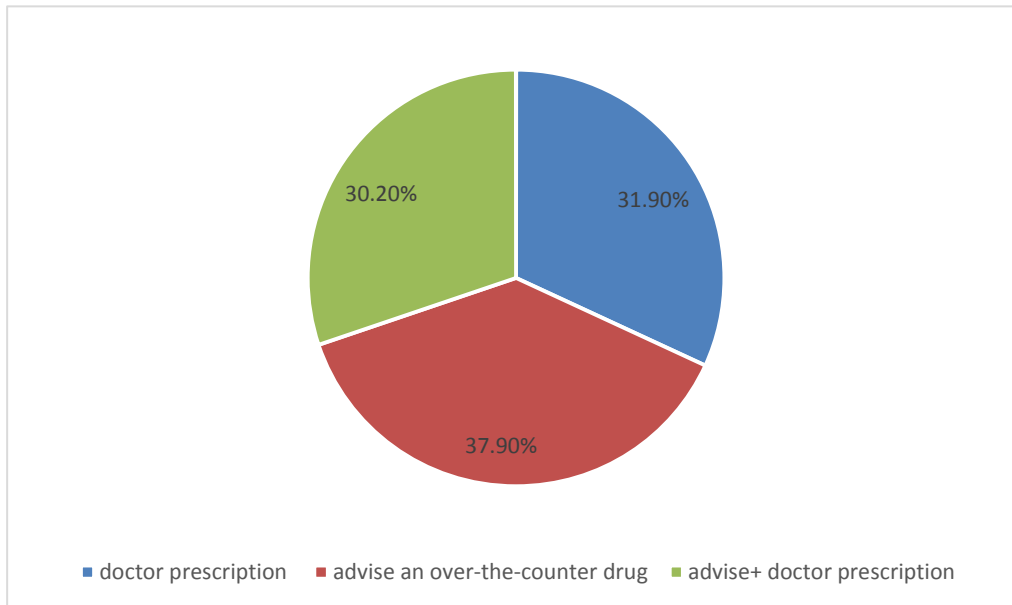


Figure 04 : Distribution of cases according to the pharmacist's behavior with self-medication

7. The distribution of cases according to the behavior of the pharmacist with self-medication: The distribution of cases according to the behavior of the pharmacist with the liberalization of the sale of certain medicines revealed that the liberalization of the sale of certain medicines represents the majority (53.9%).

8. The distribution of cases according to the behavior of the dispensing pharmacist according to the requirement of prescriptions: The distribution of cases according to the behavior of the dispensing pharmacist revealed that the majority are for the requirement of the order prescription 86.8%.

III. Discussion

1- Socio-demographic characteristics of the study population

A study carried out in the town of SIKASSO in MALI in 2004 showed that 40% of pharmacists and 13.30% of female pharmacists were aged between 30 and 40 (3).

According to a study carried out in Algeria (study of a sample of 100 pharmacists with a degree in pharmacy, who were practicing permanently in three towns in eastern Algeria, Sétif, Mila and Bejaia, and have been in the profession for at least one year). The study population was equally divided by sex (52% women and 48% men), with an average age of 36.20 ± 8.04 (4)

According to the literature review, pharmacies owned by female pharmacists were higher (53.5%) than those owned by their male counterparts.

Our survey involved 76 dispensing pharmacists, 70 women and 30 men.

Studies in the literature show that the average age of pharmacists is relatively young (36). In France, there is a trend towards an ageing profession, since the average age of French pharmacists is 46.6.

According to our study, the average age of the study population was 39.47 years, or almost 40 years. The minimum age of the population was 25, with a maximum age of 65. These results are consistent with those found in France, which indicate an ageing trend in the profession of pharmacist in Algeria, with a predominance of women.

The average length of service in this study population, carried out on a sample of 100 pharmacists with a pharmacy diploma in 2016, practicing in three towns in eastern Algeria, Sétif, Mila and Bejaia, was 10 years (4).

A breakdown of the cases in our sample according to the age of the pharmacy showed that the majority of pharmacies were between 01 and 05 years old, accounting for 46.1%.

These results indicate that it takes a relatively shorter period of time to acquire a good command of the profession, a factor which has more consequences for self-medication.

The distribution of cases in our sample according to the location of the dispensary reveals that the majority of dispensaries are located in a populated area (82.67%). These neighborhoods are known for their relatively low socio-economic and educational levels, which indicates that these elements represent a criterion for self-medication.

2- Deliverer quality

A study carried out in the town of SIKASSO in MALI in 2004 (3) showed that 81.66% of the dispensed medicines were made by vendors and 18.33% by pharmacists. This result is not consistent with the study carried out by Diarra in 2003 (5), which found that 54.6% of dispensing was done by full pharmacists, which is understandable given that the majority of sales assistants were not dispensing specialists and were therefore unable to assess the consequences of this practice.

Following this study, 10 pharmacists out of 15 (66.66%) stated that they had a prescription pad, but none of them used their pad when purchasing poisonous substances (list I or II); This would be due to pharmacists' failure to comply with the law in force, as the same observations were made in Bamako in 2003 by Diarra (5), who found that 73.1% of pharmacists surveyed had a prescription pad, but none used it, which is not a salutary act for their profession.

In the course of this study, 93.33% of respondents thought that it was normal to liberalize the sale of certain medicines without a prescription, such as analgesics, antiasthenic, antipyretics and anti-inflammatories, provided that they themselves remained on the premises to dispense them. It is understood that all medicines are harmful if the dosage is not respected, so it is up to pharmacists to ensure that these medicines are used correctly.

Self-medication is a practice that is taking on worrying proportions these days; the majority of pharmacists have admitted that it is due to poverty, counterfeiting of medicines on the market, lack of professionalism, in other words the lack of suitable prescribers, the proliferation of prescribers in the centers, i.e. everyone prescribing. The inaccessibility of doctors in public facilities is also a major cause. Following this study, it emerged that 95.41% of dispensers delivered without reluctance. This would appear to be due to the fact that the majority of deliveries were carried out by vendors who were only looking to increase their revenue.

According to our study, the distribution of cases according to the status of the person dispensing the medicine showed that the pharmacist represented the majority (64.47%), followed by the sales assistant (19.74%) and the student trainee (15.79%). This indicates the effective presence of the pharmacist in the dispensary, making it possible to provide adequate information to patients and limit the consequences of self-medication as far as possible.

3- Class of drug requested

According to a study of the literature, the first 4 places were occupied respectively by antiparasitic drugs, analgesics-antipyretics, antibiotics and anti-inflammatory drugs. Zongo in Bobo Dioulasso found that between 3-09-1991 and 18-11-1991 the top 4 positions were occupied respectively by analgesics-antipyretics, antiparasitics, antibiotics and anti-inflammatories (6).

Anti-malarial drugs accounted for 37.1% of drugs purchased in another study. The difference could be attributed to the variance in study region and time period.

In one study, the top 4 compounds were chloroquine, sulfadoxine-pyrimethamine, paracetamol and acetylsalicylic acid respectively. The percentage for paracetamol was 10.3% and for acetylsalicylic acid 6%. The superiority of paracetamol over acetylsalicylic acid may be due to the possible adverse effects of the latter, in particular the gastrointestinal hemorrhaging with which the public is familiar.

Poisonous substances accounted for 43.5% of self-medication (31.1% list I and 12.4% list II). It can be seen that 43.5% of patients were unaware of the regulations in force governing the dispensing and renewal of medicines containing poisonous substances. This is worrying, given

that patients or those responsible for purchasing the drugs have not always known how to use them properly.

Zongo in Bobo-Dioulasso found 35.7% of medicines containing poisonous substances, including a few cases of narcotics in self-medication. List I accounted for 16.1% (6)

According to the results obtained in another study, anti-infective (especially antibiotics) are the most widely consumed (33%) of the therapeutic groups adopted in both human and veterinary medicine. The high consumption of antibiotics has also been reported in studies carried out in different countries: 28% in Germany, 58% in Spain, (35% in the UK, 43% in France and 48% in Italy). Followed by anti-inflammatories and hormones. It turns out that these three therapeutic groups lead the way in terms of consumption, with other groups such as gastroenterology drugs, anti-allergics, antiseptics and beta-blockers coming in second, with the lowest rate of consumption compared with the first three therapeutic groups. These results are supported by the report from France's national drug and health product safety agency (Agence nationale de sécurité du médicament et des produits de santé, 2013). After use, these medicines are found in large quantities in the environment, in different forms and by different routes. Studies around the world have shown the presence of concentrations of drug residues in natural environments. The report by the Académie Nationale de Pharmacie (7,8), which provides quantitative conclusions based on a number of international studies, shows that the essential pharmaceutical groups most frequently found in the environment are anti-inflammatories, antibiotics, anti-cancer drugs and hormones. This is also confirmed by the work of Nikolaou *et al.* 2007 (9). In 2013, who observed that ATBs are among the pharmaceutical products that contaminate the environment the most, due to their high rate of consumption. According to Blasco & Delvallés, (2008) (10), non-steroidal anti-inflammatory drugs (NSAIDs) represent the best-

selling class of drugs compared with other therapeutic groups.

In addition, a work by Heberer in 2002 (11) showed the presence of analgesics, antibiotics, anti-inflammatory, antibiotics/biostatics, anti-epileptics, blood lipid regulators, contrast products (x-rays), cytostatic agents and oral contraceptives in water treatment plant effluents. According to another study, NSAIDs (analgesics and painkillers) take first place as the most frequently self-medicated drugs, due to the trivialization of the symptoms treated by this class (headaches, toothache, lower back pain, flu syndrome, etc.), in line with studies carried out in Ethiopia by Abay & Amelo in 2010 (12). Despite their side effects, NSAIDs are among the most commonly self-medicated drugs. On the other hand, paracetamol (Doliprane®, Efferalgan®, Dolyc®) is the most commonly self-medicated analgesic (13). An article on the practice of self-medication among students in Congo also stated that 97.5% of them had already used paracetamol. This frequent use was also reported in a study entitled "Assessment of Self-Medication Practices Among Medical, Pharmacy, and Health Science Students in Gondar University", where 46% used paracetamol and 24% NSAIDs. Fardeheb's work in 2015 (14) also confirms this. Followed by throat and stomach medicines, which belong to the therapeutic classes of anti-infectives (with Amoxicillin taking pride of place), then cough suppressants. The same therapeutic groups are confirmed by L'Association française et internationale de protection animale, 2015.

The results of the Kassabi-Borowiec (15) study show significant use of analgesics and antipyretics (50%), particularly paracetamol, followed by acetylsalicylic acid. Medicines used to treat ear, nose and throat (ENT) and respiratory tract problems accounted for 20%, followed by diarrhea remedies and antispasmodics. In France, paracetamol is the leading drug sold in pharmacies, followed by other analgesics such as ibuprofen and codeine in combination. Amoxicillin, aspirin and levothyroxine sodium are also sold.

According to a prospective pharmaco-epidemiological study of a cross-sectional descriptive nature carried out on a random sample of the population of 4 circles in the province of Khémisset (Algeria) which lasted four months, from February 2016 to May 2016. Analgesics (24%), represent the class of drugs most used in self-medication in this survey, this is due to the trivialization of symptoms treated by this class (headaches, dental pain ...) and the underestimation of their harmful and hepatotoxic effects. Several studies

have shown the same result.

In second place are cough suppressants (18%), as shown by a study carried out in the Sousse region of Morocco: cough suppressants are consumed the most because of climate change.

This is followed by NSAIDs (16%). As far as NSAIDs are concerned, overuse of this class can lead to epigastralgia, abdominal pain, nausea and vomiting, diarrhea, hematemesis (16). In fact, a study carried out in 2014 showed that 40% of adverse reactions to self-medication drugs were of a digestive nature.

Then there are antibiotics (14%), which do not require a doctor's prescription and are among the most commonly self-medicated drugs. Patients ignore the risk of developing bacterial resistance.

A pharmacy survey was carried out in 3 towns in the eastern region of the Kingdom of Morocco: Oujda, Berkane and Taourirt, over a period of 4 months (June 2010 to September 2010) using a questionnaire.

Painkillers are in first place. According to several studies, this class is the leading category of self-medication. Orexigenics come second. This type of antihistamine (antiH1) represents an important class of self-medication, especially in working-class neighborhoods (in Q. Residential occupy 6th place). The abuse of orexigenes is due to the culture of the people of the region, especially women, who seek to have a large waistline which they consider to be a criterion of beauty (16).

In third place was NSAID, a class widely used in self-medication in all regions.

The undesirable effects, especially gastric, of this therapeutic family should normally limit self-medication, because an abuse of NSAID will inevitably increase the frequency of ulcers in people who self-medicate with this class. This is the result of a study published on the bulletin of the National Academy of Medicine in Paris.

As far as contraceptive pills are concerned, despite their exclusivity for a specific age group (women aged between 15 and 45) and for a specific period (one pill a day, with a one-week break,

i.e. one box a month), they are in fifth place. It is therefore a self-medication drug par excellence. Antibiotics, anti-diarrhoeal agents, cough suppressants, laxatives and antifungals are in 6th, 7th, 8th, 9th and 10th place.

The explanation we have found is that patients who have diarrhea, coughs, constipation or even fungus, ask the Pharmacist for advice. This again explains the trust given to

Pharmacists.

Eleventh place was reserved for A.I.S. This was an expected result, as this is a class of drugs that is very well known for its undesirable effects, which limits its use in self-medication. We also found that 28% of pharmacists did not classify them, so they refused to dispense them without a prescription.

The breakdown of cases in our sample according to the medicine requested by the patient showed that analgesics accounted for the majority (15.29%), followed by antibiotics (13.64%), cough suppressants (13.22%), gastroenterology (12.4%), non-steroidal anti-inflammatory (11.36%),

contraceptives (10.33%), antihistamines (9.5%), lastly steroidal anti-inflammatory (5.372%), antiparasitic (3.5%) and others (1.24%). These results are in line with those found in the literature, which suggest that this is due to the trivialization of the symptoms treated by analgesics, which account for the majority (headaches, dental pain, etc.), and to the underestimation of their harmful and hepatotoxic effects, also due to the frequency of these signs and symptoms. Then there are antibiotics, due to a lack of awareness of the development of

resistance. Cough suppressants are also ranked in third place because of climate change and the winter period.

4- Diseases that have been self-medicated

According to studies in the literature, gastric problems rank first among the illnesses or symptoms for which people seek self-medication or advice from a pharmacist. After gastric problems come ENT, pulmonary, gynecological, urological and dermatological conditions. Ophthalmology and circulation problems come last.

The distribution of cases in our sample according to the illnesses that were self-medicated showed that influenza and headaches represented the majority, followed by sore throats and gastric illnesses, dermatological illnesses and, lastly, ENT and gynecological illnesses. This is in line with the data in the literature, which suggests that flu-like symptoms, sore throats and gastric illnesses are commonplace.

5- Source of drug knowledge review

The study of self-medication carried out in pharmacies in SIKASSO in 2004 showed that 46.66% of pharmacists had both a therapeutic dictionary and a Vidal (3).

The distribution of the cases in our sample according to the sources of drug knowledge

review revealed that the Vidal represents the majority (45.76%), then the Chiffa officine (32.20%), and others represent (22.03%). This is consistent with the literature. These review sources make it possible to consult information about the medicines requested by the patient and to limit the consequences of self-medication.

6- Patients with consequences of self-medication (side effects)

The literature indicates that self-medication is not without its risks. Many examples can be given: In the UK, paracetamol is the leading cause of drug poisoning, ahead of ibuprofen and aspirin. Similarly, in the United States, there are currently "one hundred deaths and thirteen thousand emergency room visits each year for people who have unintentionally overdosed on paracetamol". In the Netherlands: dextromethorphan overdoses due to overuse of cough medicines by young people are a major concern.

A typology of the risks associated with self-medication has been drawn up:

The first and most obvious risk is misuse of the product. In March 2005, an Irish study showed that one in two patients did not read the instructions when self-medicating. This is a risk factor which, in the absence of advice from the pharmacist, can lead to misuse. Misuse can have a lasting impact on the effectiveness of the treatment. For example, taking antibiotics in insufficient

doses can lead to antibiotic resistance, while repeated use of antihistamines, analgesics or laxatives can lead to dependency.

The second identifiable risk is delayed diagnosis: the patient treats a symptom without treating its cause. This makes diagnosis even more difficult.

Thirdly, there are the risks associated with unauthorized channels. These are all the more dangerous because it is often difficult for patients to distinguish between official and illegal, insecure channels. According to the World Health Organisation (WHO), 50% of medicines circulating on the Internet are counterfeit (data from November 2006). We also know that the internet is a vector for the marketing of products that are not authorized because they present an unfavorable risk/benefit ratio.

One case has been noted in the literature concerning the iatrogenic risks of self-medication, which is the subject of Jean-Paul Tillement's presentation of an English patient aged 64 who, having self-diagnosed myalgic encephalomyelitis, took 10 to 40mg of prednisolone a day, purchased over the internet, for four years, and developed glaucoma and cataracts (17).

According to the side-effects occurring following self-medication revealed in our study 36% had side-effects following self-medication, this is potentially linked to a lack of information on the part of the dispensing physician, whose role is to provide therapeutic education for the patient and explain how to use the medicine.

7- How do you behave when asked for advice?

In the case of self-management of a chronic disease, the pharmacist's role is to complete the patient's therapeutic education and help them to self-manage their disease. This support involves explaining how to use monitoring tools (e.g. peak expiratory flow meters (PEFs) for asthma, self-tests for blood glucose, injection pens, etc.), explaining how to use the results, and checking how the patient is adjusting his or her doses in line with the doctor's recommendations. Pharmacists should also refer patients to a doctor if there are signs that their illness is worsening, or if they are not following the recommended medical care.

They can renew chronic treatments if necessary. In some countries, the healthcare system has given the pharmacist the role of prescriber in partnership with the doctor, as in the United Kingdom.

Access to medicines commonly (but incorrectly, as we have seen) referred to as *self-medication*

is secured in France by the pharmacist: this is known as officinal medication.

In this case, the pharmacist's prior involvement consists of identifying the patient's request, ensuring that the treatment is appropriate for the pathology or minor disorder in question, guiding

the patient in taking the treatment, preventing misuse, pointing out the limits that should not be exceeded, giving criteria that should lead the patient to consult his doctor, inviting the patient to consult his doctor again in the event of difficulty or the occurrence of a new event, and so on.

8- You are in favor of liberalizing the sale of certain medicines:

The study of self-medication carried out in pharmacies in SIKASSO (3) showed that 93.33% of pharmacists said that it would be a good idea to liberalize the sale of certain medicines in pharmacies.

The distribution of cases according to the pharmacist's behavior in liberalizing the sale of certain medicines revealed that liberalization of the sale of certain medicines represented the majority (54.67%). These results are consistent with the data found in the literature.

IV. Methodological limitations

Having established the results observed in our study and their links with the literature, it is essential to set out the methodological limitations encountered in our study.

- A constraint encountered by dispensing pharmacists when filling in the questionnaire.
- The Likert scale is one of the ordinal scales. This type of scale was developed to obtain qualitative data such as the degree of satisfaction.
- The scale's performance is limited by the truthfulness of the person's answers. We were unable to check reproducibility because the study period was too short.

V. Conclusion

Self-medication is a fairly significant phenomenon in the town of Sidi-Bel-Abbés (Algeria), mainly among the uneducated population, who rely on certain knowledge and advice, often forgetting the serious consequences that this practice can have. The majority of pharmacies are located in populated areas with a lower socio-economic and educational level, which is a criterion for self-medication.

Our study shows that pharmacists have been in the profession for a relatively short time, a factor which may influence the prevalence of over-the-counter drugs.

In the majority of cases, medicines are dispensed by the salesperson, who is not a specialist and cannot measure the consequences of this practice. The majority of pharmacists are present in the dispensary, which means that patients can be given adequate information and the consequences of self-medication can be kept to a minimum.

As for the medicines most commonly self-medicated, painkillers account for the majority, due to the trivialization of the symptoms treated by these medicines (headaches, dental pain, etc.) and the underestimation of their harmful effects. Antibiotics follow, overlooking the risks of bacterial resistance. Then there are cough suppressants, particularly during the period of climate change. Then there are the non-steroidal anti-inflammatories, a class of drugs widely used in self-medication, whatever the region, but their undesirable effects, particularly gastric, should limit their use in self-medication. For example, antihistamines (antiH1) represent the majority of self-medication in working-class neighborhoods, as women seek to achieve a large waistline, which they consider to be a criterion of beauty. Medicines with undesirable side-effects should be limited in self-medication.

In terms of self-medication, flu and headaches account for the majority, followed by sore throats, gastric diseases, dermatological diseases, ear, nose and throat diseases and

gynecological diseases, which is in line with the frequency of self-medication.

According to the sources for reviewing knowledge of medicines, the Vidal represents the majority, followed by the Chiffa, which makes it possible to consult information about the medicines requested by the patient and limits the consequences.

One of the most frequently reported consequences of self-medication is the misuse of medicines due to a lack or absence of information. Delayed diagnosis, because the patient treats a symptom without treating the cause.

The majority of pharmacists are in favor of self-medication, particularly for analgesics, antihistamines, anti-inflammatories and antipyretics, pointing out that all medicines are harmful if the patient does not follow the correct dosage. It is up to the pharmacist to advise patients on the correct use of these medicines.

Self-medication is a worldwide phenomenon, and its practice represents a danger to patients. An awareness-raising program is needed to set limits to its scope, especially in collaboration with dispensing pharmacists because of their direct contact with patients.

VI. References

1. WHO. Guidelines for the regulatory assessment of medicinal products for use in self-medication; WHO/EDM/QSM/002000.
2. Promoting rational use of medicines: key elements. WHO, Geneva.2002.Available at URL: <http://apps.who.int/medicinedocs/pdf/s4873f/s4873f.pdf>.
3. Konate L. Etude de l'automédication dans les officines de la ville de Sikasso. These Pharmacie ; 2004. 78 p
4. Bahlouli AL Gherouat I, Boukerma Z et al. La prescription médicale et le role du pharmacien. Journal Algerien de Medecine, 2018
5. Diarra, A. (2004) Self-medication in pharmacies in Bamako. Thèse de Pharmacie, Bamako, N°46.
6. Zongo T. Antibiothérapie au CHU Sourou Sanou: qualité des ordonnances médicales. Thès. pharm. n°183 ; UFR / Sciences de la Santé. Université de Ouagadougou. 2013 ; 103p.
7. The World Health Organisation WHO;
<http://fr.wikipedia.org/wiki/M%C3%A9dicament>
8. Assembly of People's Deputies. Loi n024/94/ADP portant Code de la Santé Publique. ADP Burkina Faso, 1994: 788.
9. Nikolaou A, Meric S, Fatta D. Occurrence patterns of pharmaceuticals in water and

- wastewater environments. *Anal Bioanal Chem.* 2007 Feb;387(4):1225-34.
10. Blasco, J., DelValls, A., 2008. Impact of Emergent Contaminants in the Environment: Environmental Risk Assessment, in: Barceló, D., Petrovic, M. (Eds.), *Emerging Contaminants from Industrial and Municipal Waste: Occurrence, Analysis and Effects.* Springer Berlin Heidelberg, Berlin, Heidelberg, pp. 169-188.
 11. Heberer T. Occurrence, fate, and removal of pharmaceutical residues in the aquatic environment: a review of recent research data. *Toxicol Lett.* 2002 May 10;131(1-2):5-17.
 12. Abay, S.M. and Amelo, W. (2010) Assessment of Self-Medication Practices among Medical, Pharmacy, and Health Science Students in Gondar University, Ethiopia. *Journal of Young Pharmacists*, 2, 306-310.
 13. Matmour D, Memou A, Merad Y, Bouzid A, Brik A. Pratiques de l'automédication à l'ère de la pandémie COVID-19 dans trois villes de l'ouest Algérien. *Journal de la faculté de Médecine d'Oran* 7(1), 871-880, 2023
 14. Fardeheb M. Le poste prescripteur : un système d'information thérapeutique pour une prescription conforme aux données actuelles de la science (DAS). Thèse Pharmacie, Lyon, France, 1999
 15. Kassabi-Borowiec L. Facteurs et modalités de l'automédication ; Enquête auprès de la clientèle de médecins généralistes de l'est parisien. Thèse Médecine, Paris-faculté de Lettres du pharmacologue 2002;16(2) :153.
 16. Ouasrhir A, 2010, Automédication à l'officine dans la région de l'orientale (Enquête auprès 121 Pharmacies), Thèse : Doctorat en Pharmacie. Université Mohammed V, P: 2, 4,6
 17. Tillement.J.P. Thérapeutique générale. Edition Masson.2002; Item167; 5; Item172; 49, 55