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Self-Medication and its Characteristics in the Population of Rombe I and II Districts in the City of Uvira, Democratic Republic of Congo

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ABSTRACT:

Introduction: Irrational use of these drugs leads to increased microbial resistance, wastage of resources, masked diagnosis and use of excessive doses of drugs and can generally lead to drug addiction. The objective of this study is to determine the frequency of self-medication, its characteristics and analyze the factors associated with it among the general population of the city of Uvira.

Methodology: This is a descriptive and analytical cross-sectional study conducted among 371 people from the Rombe I and II districts of the commune of Mulongwe in the city of Uvira in the Democratic Republic of Congo. The study was carried out from January to August 2023. Data collection was done using a survey questionnaire recorded under Kobocollect and administered to respondents in the form of a direct interview using a Smartphone (Samsung S10).

Result: The prevalence of self-medication is 96% and no independent variable analyzed in this study is associated with the practice of self-medication. The source of information on the practice of self-medication was the seller of medicines in pharmacy pharmacies (31.5%). Respondents listed social vulnerability/poverty (84.0%) followed by the high cost of healthcare in healthcare facilities (16%) as reasons for self-medication. Analgesic-antipyretic-anti-inflammatory drugs were the most commonly consumed class of drugs in self-medication at 30.1% followed by antimalarials at 24.2% of cases and this on the advice of product sellers/pharmacists. Traditional medicine also recorded a frequency of self-medication (44.9%).

Conclusion: It is important that health authorities work to ensure access to quality healthcare for all. The approach of mutual health insurance companies but also the promotion of universal health coverage would be possible. Regulations regarding the sale of medicines should be respected by stakeholders and rigorous monitoring should follow.

KEYWORDS: Self-medication, Uvira, Medicines, Rombe I and II, DR Congo.

INTRODUCTION

Self-medication is the administration of any medication chosen without medical advice, or without prior advice from a health professional in his field of expertise to treat a real or imaginary pathological situation. It can be a product of modern or traditional medicine (Bah et al., 2020; Mboni et al., 2023; Mbutiwi Ikwa Ndol et al., 2013; Mouhari-Toure A, et al., 2010). Self-medication as such is not limited to taking medication, but also includes interventions aimed at changing lifestyle (Behzadifar et al., 2020; Galato et al., 2009). The high cost of patient care (poverty), the trivialization of certain diseases, low purchasing power and poor knowledge of the population about the risks incurred in the misuse of medications are among the most common reasons for self-medication

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(Abdi et al., 2018; Akande-Sholabi et al., 2021; Chiribagula et al., 2015; Mananasi, 2020; Mboni et al., 2023). The inability to go to a doctor or to seek treatment in health care facilities has opened a wide door to self-medication, prayer and traditional medicine (Mananasi, 2020).

Street products and traditional medicines are a common source of self-medication in sub-Saharan Africa (Mouhari-Toure A, et al., 2010). Irrational use of these medicines leads to increased microbial resistance, wastage of resources, masked diagnosis and the use of excessive doses of medicines and can generally lead to drug dependence (Bobga et al., 2022). On the other hand, other authors demonstrate that if used appropriately, self-medication can save time (it saves time spent queuing for medical consultations), be economical and lighten the load of health professionals, giving them more time to cure more serious diseases (Bobga et al., 2022; Mbutiwi Ikwa Ndol et al., 2013; Yeika et al., 2021).

In the Democratic Republic of Congo, regulations on the sale and use of pharmaceutical products are poorly observed (Mbutiwi Ikwa Ndol et al., 2013). The prevalence of self-medication in the DR Congo was estimated at 49% in 2001 for the entire population and at 57% in Goma, North Kivu in 2013. It was 99% among students at the University of Lubumbashi in 2015 and 61.3% among pregnant women in Bukavu in 2016 and 99.3% among students in the city of Uvira in 2023 (Akilimali et al., 2022; Chiribagula et al., 2015; Mboni et al., 2023; Namegabe, 2008).

In the city of Uvira, where this study took place, the prevalence and characteristics related to self-medication among the general population remain unknown. Thus, the originality of this study is that it is carried out in Uvira among the general population of the city of Uvira. This study determines the frequency of self-medication and analyzes the factors associated with it among the population of the city of Uvira in the South Kivu Province in the Democratic Republic of Congo.

METHODOLOGY

Location and setting of the study: We carried out our study in the Uvira health zone, specifically in the commune of Mulongwe, Rombe I and II districts. The two districts are the most populated in the commune of Mulongwe. It is located in the city of Uvira, South Kivu province in the Democratic Republic of Congo. The commune of Mulongwe is located in the Uvira Health Zone; a health zone that has 22 health areas with a total population of 387,421 inhabitants (Uvira Health Zone Report, 2022). The Uvira health zone has an area of 16 km ^{2} and an average density of 23,671 inhabitants per km ^{2}.

As for the city of Uvira, it is located at the following GPS coordinates: 03°26′ to the South and 29°08′ to the East (Manya et al. 2020) (Manya et al., 2020). It is bordered to the North by the city of Kiliba-Kagando, to the South by the village Kigongo of the Bavira chiefdom community and the Kambekulu River, to the East by Lake Tanganyika, and to the West by the Mitumba range. The city has 3 communes namely: Mulongwe commune, Kavimvira commune and Kalundu commune. Daily minimum temperatures are around 29 $^\circ$C, rarely falling above 27 $^\circ$C or exceeding 32 $^\circ$C (Manya et al., 2020).

Type of study:

Our study is a cross-sectional, descriptive and analytical study aimed at determining the prevalence and characteristics of self-medication among the population of Rombe I and II neighborhoods. It was carried out between January and August 2023.

Inclusion and exclusion criteria:

The study included all adults who had given informed consent and lived in the aforementioned neighborhoods. Children and adolescents and non-consenting individuals were excluded from the present study.

Population and sample:

Our study population consisted of adult men and women living in the Rombe I and II districts. Rombe I has 3,970 inhabitants and Rombe II has 6,551. This made a total of 10,521 people.

A sample was taken and the minimum sample size was calculated as follows: n = z2 x (pxq) /e2 = 1.96x (0.5 x 0.5) / 0.05= 384 n= minimum sample size, z= 95% confidence interval z: 1.96, p= prevalence of self-medication taken at 50%, q= 1-p, e= margin of error 5%. 13 people targeted among the sample deliberately refused to participate in the study. Thus, the study was carried out among 371 adults randomly distributed in the avenues of the Rombe I and II neighborhoods, respectively 140 and 231 (i.e. 4% of the total population of each neighborhood).

Data collection and processing:

A survey questionnaire recorded in Kobocollect was administered to the respondents in the form of a direct interview using a smartphone. After data collection, an Excel file was exported from Kobocollect for statistical analyses in SPSS version 20.1 software. The statistical significance level was set at $p < 0.05$ and 95% CI.

Ethical considerations

During our study, free and informed consent was requested and the survey questionnaire was completed anonymously.

RESULTS

Table I: Sociodemographic characteristics of our respondents

Variables	Workforce (n=371)	Percentage (%)
Age		
16-17 years old	112	30.2
18-29 years old	116	31.3
30-49 years old	74	19.9
50-59 years old	37	10
60 years and over	32	8.6
Sex		
Male	100	27
Female	271	73
Residence		
ROMBE I	171	46
ROMBE II	200	54
Level of study		
None	10	2.7
Primary	119	32.1
Secondary	173	46.6
Higher or university	69	18.6
Occupation		
Without	34	9.2
Housekeeper	48	12.9
Fisherman	21	5.7
Farmer	132	35.6
Trader	113	30.5
State official	23	6.2

The majority of our respondents were between 18 and 29 years old, or 31.3%, with a majority of women at 73.0%, or a sex ratio of 2.71 in favor of women. The vast majority had a secondary education level, or 46.6%. Regarding the profession, farmers represented the majority with 35.6%.

96% of respondents stated that they had already self-medicated and the source of information on how this practice was done was the seller of the drugs in pharmacies in 31.5% of cases. (Figure 1 and 2).

The results of the study showed that 66.3% of respondents believe that the most well-known role of pharmacies is the sale of over-the-counter medications and 29.6% believe that prescription medications. However, 4% of respondents believe that pharmacies also have the role of a consulting room. Healthcare workers and/or drug sellers in pharmacies were the prescribers of medications at 63.1%.

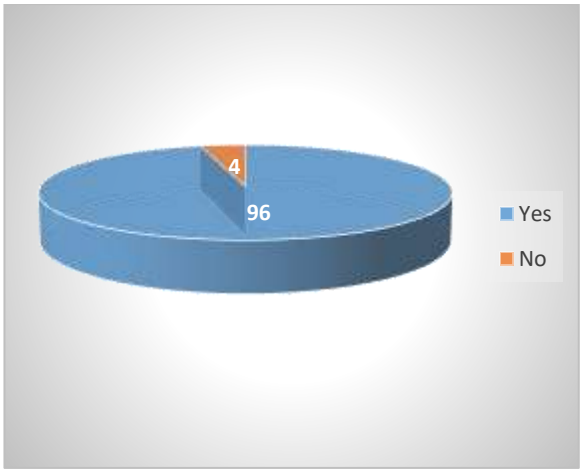

Figure I. Having already self-medicated

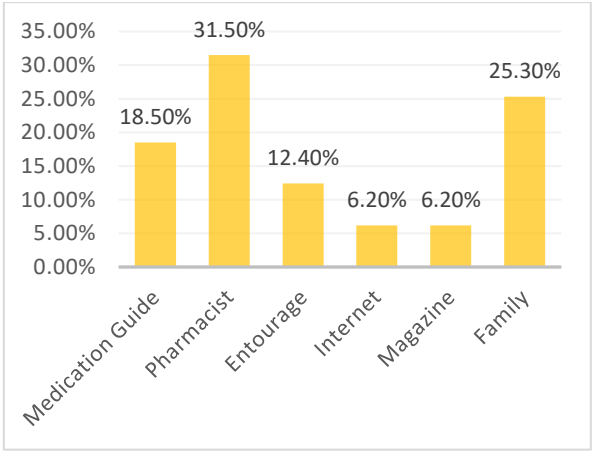

Figure II. Source of information

Two main reasons for self-medication were cited. The most common were poverty (84%) and the high cost of care in local hospitals (16%).

Generally, the symptoms for which the respondents self-medicated were the most cited, fever (22.8%), stomach ache (18%), headache (13.8%) and malaria (13.5%) **(figures III and IV).**

According to the results of this research, for the majority of respondents, the last self-medication was less than a month ago (98.3%). And the person who led to self-medication for the first time was a parent in 50.6% of cases followed by a close friend or 26.4%.

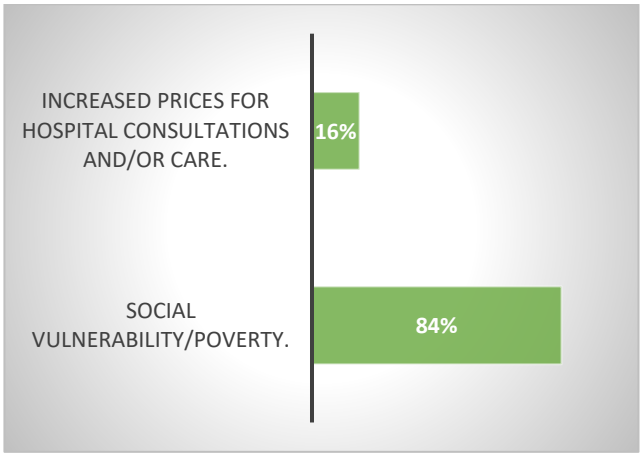

Figure III. Reason for taking medication without a prescription

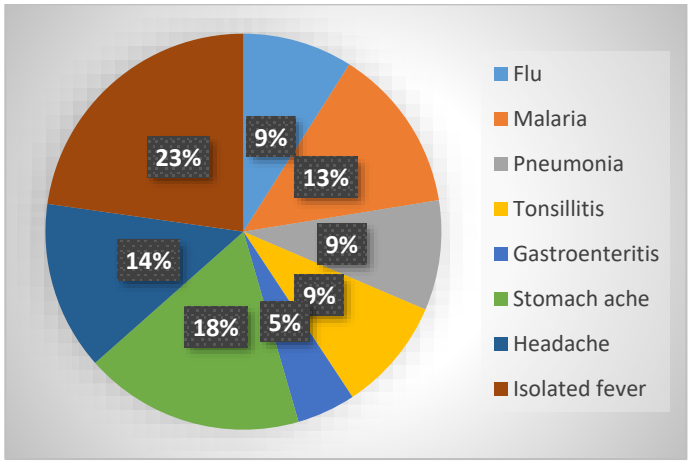

Figure IV. Symptoms or illnesses leading to self-medication

The results of the study prove that the respondents resorted to self-medication in some cases of illness (44.9%) and others resorted to it every time they fell ill (35.1%). The majority of them, 80.3%, were aware of the existence of risks of self-medication, the most known of which were inappropriate treatment (37.8%) followed by dosage error (24.8%) which could lead to purity. In addition to all this, diagnostic error was reported at 18.9%.

It turns out that the majority of our respondents determined the dose according to the symptoms, i.e. 40.2%, and others followed the old prescription (25.3%).

The study shows that analgesic-antipyretic-anti-inflammatory was the class of drugs most consumed in self-medication, at 30.1%, followed by anti-malarials at 24.2%. To resort to this or that other drug, 60.4% resorted to the advice of the pharmacist, and 24.4% to the fact that there is the presence of a family pharmacy at home. Tablets were the most consumed galenic form in self-medication at 80.1%.

Of all the respondents, 69.9% confirmed changing medications when self-medicating, and 90.6% did not take several classes of medications in combination. The data shows that 57.4% of our respondents changed medications solely for the purpose of seeking a cure. And 91.9% of them did not take several medications concurrently. On the other hand, 8.1% who took them concurrently, 72.4% of them took Zendex and Action at the same time, and others took Albendazole and Metronidazol (27.6%).

Of all, 34.4% of our respondents believed that they took medications through the pharmacist/medicine seller in pharmacies and others take them through the guidance of certain medical experts (30.1%) and 24.7% through information from the media.

44.9% of respondents also used medicinal plants in cases of illness and self-medication. The most commonly used plants were acacia at 48.1% of cases, followed by eucalyptus at 35.7%.

Table II. Association between self-medication and sociodemographic characteristics.

Variables	P-Value	Unadjusted OR	95% CI of unadjusted OR
Sex			
Male		1.00	
Female	0.815	0.870	[0.271-2.788]
Age	**0.981**		
16-17 years old		1.00	
18 to 29 years old	0.998	49884443.107	0.000
30 to 49 years old	0.998	74595427.366	0.000
50 to 59 years old	0.998	58850095.108	0.000
60 years and over	0.998	75910043.542	0.000
Residence			

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Rombe I			
Rome II	0.593	0.678	[0.163-2.820]
Instruction			
Without		1.00	
Primary	0.999	96031832.431	0.000
Secondary	0.999	90488234.514	0.000
Superior/university	0.999	97319150.783	0.000
Religion	**0.926**		
Catholic		1.00	
Protestant	0.575	0.624	[0.120-3.236]
Kimbanguist	0.900	0.864	[0.089-8.419]
Muslim	0.682	1,601	[0.168-15.241]
Revival Church	0.638	0.634	[0.095-4.234]
Others	0.720	0.642	[0.057-7.194]
Occupation	**0.873**		
Housewife			
Fisherman	0.901	1,173	[0.095-14.449]
Farmer	0.671	1,429	[0.276-7.403]
Trader	0.560	0.574	[0.089-3.713]
State civil servant	0.998	.000	.000
Others	0.744	0.663	[0.056-7.821]
Role of a pharmacy	**0.739**		
Consultation			
Sale of prescription drugs	0.479	0.411	[0.035-4.808]
Sale of medication without a medical prescription	0.668	0.605	[0.061-5.989]
Knowledge of the individuality of a drug treatment			
Yes		1.00	
No	0.674	1,419	[0.278-7.242]

According to a statistical analysis carried out, it appears that no independent variable included in the model is associated with the practice of self-medication at the 95 percent threshold (**Table 2**).

DISCUSSION

It was revealed by this study on self-medication within the general population conducted among 371 people (men and women) of the city of Uvira especially those of the Rombe I and Rombe II districts in the commune of Mulongwe that self-medication is too practiced by the population at 96%. On the other hand, this rate is much higher than that of Mouhari et al. In Lome which was 44% (Mouhari-Toure A, et al., 2010)while in sub-Saharan Africa, self-medication seems to occupy an important place for social, economic and psychological reasons (Gaüzère and Aubry, 2013). The prevalence found in this study corroborates that found in the study conducted among students in Uvira which was 99.3% (Mboni et al., 2023)and in Lomé in Togo at 99% (Gbeasor-Komlanvi et al., 2017). In a study conducted among pharmacists selling medicines in pharmacies, the prevalence of self-medication was 95% (Ganassi, 2023). Several recent studies carried out by several researchers in various settings across the world have revealed prevalences of self-medication ranging from 15.3% to 96% (Bah et al., 2020; Bassoum et al., 2023; Benbrahim, 2018; Gbeasor-Komlanvi et al., 2017; Klein, 2011; Mbutiwi Ikwa Ndol et al., 2013; Menguellti et al., 2022, 2022; Mihindou et al., 2024).

The disparity in the organization of the health system in these different countries, combined with socio-cultural habits, could justify these variable rates.

By statistical analysis, it was noted that no independent variable analyzed in this study is associated with the practice of self-medication at the 95 percent threshold, while in several studies self-medication tended to increase with age (Abahussain et al., 2005; Chiribagula et al., 2015; Dengler and Roberts, 1996; Jaquier et al., 1998). We can say that the high prevalence observed in studies conducted in different provinces of the Democratic Republic of Congo would probably be explained by poor application of current pharmaceutical standards. Generally, certain dangerous drugs and those that expose to health risks should not be sold without a prescription, hence the phrase "do not sell without a prescription" is sometimes labeled on some drug containers (Abdi et al., 2018).

The present study reported that the source of information on the manner of this self-medication practice was the seller of medicines in pharmacies (31.5%).

66.3% of respondents stated that the most well-known role of pharmacy pharmacies was the sale of over-the-counter medications. This is a very misconception, yet it is a sad truth. In the study, it is true that regardless of the medication, one only needs to have the money to pay for it, and the requirement of a medical prescription does not apply. This study shows that healthcare personnel and/or pharmacy salespeople were cited as prescribers of medications to be taken in this practice of self-medication (63.1%).

Da Silva et al. (2012) (da Silva MGC, Soares MCF, Muccillo-Baisch AL., 2012)in his study proves that self-medication practices appear very often among private and informal distributors of pharmaceutical products, spontaneous requests for medicines, without presentation of a prescription or request for advice from the seller, constitute in the private sector (pharmacies and establishments of wholesale sale of pharmaceutical products) and informal, the main method of purchases (between 65 and 75% of sales observed). Of all the reasons for self-medication, in this study, respondents listed social vulnerability/poverty (84.0%) followed by the high cost of healthcare in healthcare facilities (16%). This result corroborates that of Komlanvi et al. (2017) , several factors are implicated in self-medication, the most cited reasons were knowledge of the disease, lack of its seriousness and lack of money. The factors associated with self-medication were the lack of health insurance, age over 32 and lack of money (Gbeasor-Komlanvi et al., 2017). Other studies have shown that this practice was accepted as long as it allows for the management of presumed benign and known diseases or symptoms with the advantage of discretion and saving time and money (Chiribagula et al., 2015; Mboni et al., 2023). We can deduce that everything revolves around the financial aspect but also the seriousness of the disease.

The last self-medication for the majority of cases dated less than a month (98.3%) and fever (22.8%), stomach ache (18%), headache (13.8%) and malaria (13.5%) were the symptoms/illnesses pushing people to self-medicate. The study by Jaquier F. et al. (1996) in Switzerland proves that the indications corresponding to self-medication are cough and colds, analgesics, antirheumatic drugs, vitamins, colds, sore throats, laxatives. There are certain symptoms for which people are more likely to self-medicate. Among these, in his study, we find headaches, muscle tension, insomnia, stomach ache and nervousness, while in Lubumbashi among students malaria 82.4%, fever 65.5 constituted the first illnesses/symptoms pushing to self-medication. In Uvira, in a study conducted among students, malaria was prevalent at 30.5% (Chiribagula et al., 2015; Jaquier et al., 1998; Mboni et al., 2023).

The people surveyed mentioned that the person who first led them to self-medicate was a parent (50.6%) followed by a close friend (26.4%). This simply means that in making a decision to practice self-medication, the advice of a third person contributed. Furthermore, Raynaud d. (2008) reveals that 43% of self-medication was advised by a health professional and that 57% would be similar to self-medication without any advice. More than half practiced self-medication without any support from the medical profession, this half based their practice mainly on personal knowledge (Raynaud, 2008).

Regarding the frequency of recourse to self-medication, the respondents resorted to self-medication in certain cases (44.9%) and each time they fell ill in 35.1% of cases. The study conducted in Uvira previously among students revealed that students resorted to self-medication each time they fell ill at 57.4% (Mboni et al., 2023).

And it turns out that almost all (80.3%) were aware of the risks of self-medication. In this regard, inappropriate treatment (37.8%) and dosage errors (24.8%) were the most cited. This result corroborates that of the study by Chiribagula et al. which found that 78.8% of these respondents recognized that self-medication could lead to therapeutic failure and that dose errors, inappropriate treatment, side effects and diagnostic errors were consequences of self-medication (Chiribagula et al., 2015). But despite this knowledge of the consequences they still engage in the practice of self-medication.

The dose taken by the respondents, at 40.2%, the results proved that it was determined according to the severity of the symptoms and others referred to old prescriptions (25.3%) without knowing if it was really the same disease. This attitude is really what we call going down the wrong path. It is possible to have the same symptoms but for different diseases, hence the need to do tests every day to know precisely which disease we are treating.

The study proves that analgesic-antipyretic-anti-inflammatory was the class of drugs most consumed in self-medication, i.e. 30.1% followed by antimalarials i.e. 24.2% and this on the advice of pharmacists (sellers of pharmaceutical products in pharmacies) at 60.4%. This result is almost identical to that found in the study by Oirdi et al. (2015) for whom 63% of self-medication practitioners asked pharmacists for advice, versus 30% who knew a product and 7% who had a prescription with an expired renewal date (Oirdi et al., 2015).

Other studies conducted found that the majority of respondents used amoxicillin 98.20%, paracetamol 97.5%, ascorbic acid 91.6% and quinine 79.4%. The most used combination is paracetamol and vitamin 88.8% and the most aberrant, amoxicillin - erythromycin 25.5% (Chiribagula et al., 2015; Mboni et al., 2023). Tablets were the most consumed galenic form in self-medication at 80.1% of cases. In other studies, self-medication by type of product was 59% for generics and 41% for the original, analgesics at 64.76%, antimalarials 41.66% and antibiotics at 33.88% (Gbeasor-Komlanvi et al., 2017; Oirdi et al., 2015).

The change in medications during self-medication was 69.9% among our respondents and 90.6% were not taking several classes of medications in combination. The reason for changing medications was the search for a cure (57.4%) and 91.9% of them were not taking several medications concomitantly. Of the few respondents who took concomitant medications (8.1%), 72.4% of them were taking Zendex and Action followed by 27.6% Albendazol and Metronidazole in combination.

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Among the people who self-medicate in this study, 34.4% believe that they take their medication correctly through the drug seller and 30.1% believe that they do it better under the guidance of medical experts.

Traditional medicine also records a frequency of self-medication. In the current study, 44.9% of respondents resorted to medicinal plants for certain illnesses, and acacia was the most commonly used plant at 48.1% of cases. Since traditional medicine is too well-known locally, it is logical that some people resort to it.

CONCLUSION

Upon reading this study, it is evident that the practice of self-medication among the population of Uvira, and specifically in the Rombe I and II neighborhoods, is commonplace. Several reasons have been cited as factors pushing self-medication, including social vulnerability and the high cost of access to health care. It would be important to consider the approach of mutual health insurance companies, but also the promotion of universal health coverage. However, this practice of self-medication helps combat local endemics, including malaria and other common diseases in the region. It should be noted, as several other studies can prove, that free and easy access to various pharmaceutical products without a medical prescription is one of the main predisposing factors. Regulating access to certain medications should undoubtedly be conditioned by a medical prescription. It is therefore up to political decision-makers and health authorities to put in place strategies limiting easy access to certain medicines in order to reduce self-medication as much as possible and, in turn, prevent caregivers from having to deal with the consequences of misuse of pharmaceutical products at the last minute.

Conflicts of interest

The authors declare no conflict of interest.

Authors' contribution

The design, literature review, data processing and writing of the manuscript was done by Derrick Bushobole Akiba; the style correction was done by Mulangaliro Muhandule, Zabibu Masumbuko Gertrude, the improvement of the text: Emmanuel Nirambo Rujanjika, Michel Mutula Kanyegere, Jean-Luc Bwija Ndasubizwa, the supervision of this study was done by Derrick Bushobole Akiba.

All authors have read and approved the final version of this manuscript.

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