INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY RESEARCH AND ANALYSIS

ISSN(print): 2643-9840, ISSN(online): 2643-9875

Volume 09 Issue 02 February 2026

DOI: 10.47191/ijmra/v9-i2-47, Impact Factor: 8.266

Page No. 832-836

Determinants of Self-Medication Among the Population of the Isangi Health Zone During Morbid Episodes

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ABSTRACT :

Introduction : The World Health Organization (WHO) estimates that more than 50% of medications worldwide are prescribed, dispensed, or sold inappropriately. Simultaneously, 50% of patients fail to adhere to their prescribed treatments. In the Isangi region, when faced with morbid episodes (such as fever, headaches, or digestive disorders), the population primarily resorts to self-medication through the purchase of modern or traditional remedies without medical consultation. This study aims to identify the factors determining the use of self-medication among the population of the Isangi Health Zone during morbid episodes.

Methodology : A household survey was conducted from August 10 to November 30, 2023, involving patients or their guardians. Data collection was performed using interview guides and observation checklists. Following collection, the data were encoded in Microsoft Excel and analyzed using STATA 13 software. Chi-square tests and logistic regression analysis were employed, with a significance level set at $p < 0.05$.

Conclusion : Self-medication is a predominant health practice, affecting more than six out of ten individuals. It is driven by a precarious sanitary environment and an average standard of living. The primary drivers of this practice include the perception of the illness as non-serious, the influence of social networks (family and peers), and the success of previous treatments. Although therapeutic failure eventually reorients patients toward official healthcare circuits, the risks of medical complications and drug resistance remain significant.

KEYWORDS : Self-medication, determinants, Isangi, morbid episode.

1. INTRODUCTION

Self-medication is defined by the World Health Organization (WHO) as the selection and use of medicines by individuals to treat self-recognized symptoms or illnesses. While it can reduce the burden on healthcare systems, it represents a major public health challenge when practiced irrationally.

The WHO estimates that globally, more than 50% of medicines are prescribed, dispensed, or sold inappropriately. Furthermore, half of all patients fail to take their medications correctly. In the United States, self-medication is common, while in France, 5% to 10% of drugs are sold without a prescription. The French self-medication market was valued at 3.7 billion euros in 2024, showing an annual growth rate of 7.1%. Studies indicate that up to 80% of the French population utilizes self-medication based on self-diagnosis.

In Africa, approximately 57% of households practice self-medication. In Morocco, a study in Fez revealed a prevalence of 77.67%, particularly among adults aged 18 to 45. In Mali, 64.52% of pharmacy customers in Bamako purchased drugs without prescriptions. Research in Senegal and Ghana reported prevalence rates of 80.69% and 53.7%, respectively, often citing long wait times at clinics and the perception of illness as benign as primary motivations.

In the Democratic Republic of the Congo (DRC), a three-decade economic crisis has led to the proliferation of informal drug sales. The healthcare system remains fragile despite reorganization efforts since 2001. Infrastructure gaps and insufficient access to care for major pathologies (malaria, HIV, diarrhea) drive the population toward self-medication. This practice poses significant risks,

including antimicrobial resistance, accidental overdose, adverse drug interactions, and dependency. The Isangi Health Zone (Tshopo Province) faces these challenges due to its vast geography and communication difficulties. Its epidemiological profile is dominated by malaria, respiratory infections, and diarrheal diseases. Faced with a morbid episode, the population chooses between conventional medicine, traditional medicine, prayer, or self-medication. This study aims to identify the determinants of self-medication in this region.

2. MATERIALS AND METHODS

2.1 Study Setting

The study was conducted in the Isangi Health Zone, located 125 km west of Kisangani. Self-medication with both modern and traditional medicines serves as the primary therapeutic resource in the area.

2.2 Study Population and Sampling

This descriptive study (August 10 – November 30, 2023) targeted ill individuals or their guardians. A multi-stage sampling method was used: simple random sampling selected 13 out of 23 health areas, followed by systematic random sampling to select household subjects.

2.3 Inclusion Criteria

Subjects (or guardians) who were ill during the study period or the preceding three months, had utilized self-medication, and consented to participate were included.

2.4 Data Collection and Analysis

Interview guides and observation checklists were used. Data were encoded in Excel and analyzed using STATA 13. Analysis included descriptive statistics (means, standard deviations), Chi-square tests for significance ($p < 0.05$), and logistic regression to identify determinants.

3. RESULTS

3.1 Socio-demographic and Environmental Profile

Table I : Socio-demographic and Environmental Profile of Respondents

Variable	Categories	Frequency (n=444)	Percentage (%)
Age	38±12 years		
Education Level		431	97,07
	≤ Secondary school	13	2,93
	≥ University		
Marital Status		45	10,14
	Living alone	399	89,86
	Living in union		
Sex		250	56,31
	Male	194	43,63
	Female		
Occupation	Unemployed	42	9,46
	Employed	402	90,54
Number of persons per household			
	8±3 members		
Main Water Source			
	Protected wells/springs	23	5,18
	Unprotected wells/springs	363	81,76
	River/Stream water	58	13,06
Type of Toilet			
	None (Open defecation)	64	14,41
	Septic tank	23	5,18
	Pit latrine with cover	19	4,28
	Pit latrine without cover	338	76,13

The mean age of respondents was 38 ±12 years (range 18–81). The majority were male, lived in unions, and were employed. Most had at least a secondary level of education. Average household size was 8± 3 persons. Environmentally, 81.76% used unimproved water sources and 76.13% used simple pit latrines without covers.

3.2 Prevalence and Nature of Self-Medication

Table II : Prevalence of Self-Medication and Characteristics of Morbid Episodes

Variable	Categories	Frequency (n=444)	Percentage (%)
Self-medication			
	Yes	291	65,54
	No	153	34,46
Type of Self-medication			
	Modern medicines	195	43,92
	Traditional medicines	96	21,62
	None	153	34,46
Pathological Category			
	Infectious/Parasitic	233	52,25
	Respiratory	101	22,75
	Ill-defined conditions	18	4,05
	Digestive	55	12,39
	Urogenital	33	7,43
	Dermatological	5	1,13s
Severity			
	Non-serious (Minor)	263	59,23
	Serious (Severe)	181	40,77
Treatment duration (days)	6±4		

The prevalence of self-medication was **65.54%**. This practice was dominated by modern medicines (43.92%) compared to traditional remedies (21.62%). The primary reasons for self-medication were infectious/parasitic diseases (52.25%) perceived as "less serious" (59.23%). The average treatment duration was 6± 4 days.

3.3 Determinants of Self-Medication

Table III : Déterminants of Self-Medication

Déterminants	Categories	Self-Medication				
		Tous (n=444)	Yes (n=291)	No (n=153)	P.Value	aOR(IC_{95})
Echec thérapeutique						
	Yes	231(52)	173(59,5)	58(37,9)	0,001	-0,41(0,2-0,6)
	No	213(48)	118(40,5)	95(62,1)		
Social circle testimonials						
	Yes	204(46)	88(46,1)	116(75,8)	0,003	7(4-11)
	No	240(54)	203(69,8)	37(24,2)		
Expérience du passé						
	Yes	209(47)	92(31,6)	117(76,5)	0.001	7(4-11)
	No	235(53)	199(68,4)	36(23,5)		
Perceived severity						
	Yes	181(40,3)	68(23,4)	113(73,8)	0,004	9(0,00-15)
	No	263(59,2)	223(76,6)	40(26,2)		

Multivariate analysis (Logistic Regression) identified several key determinants: perceived Severity ; subjects were 9 times more likely (OR = 9) to self-medicate if they perceived the illness as benign rather than serious, social Influence & Experience: The risk was 7 times higher (OR = 7) among those with previous positive experiences or favorable recommendations from their social circle, therapeutic Failure: Conversely, previous treatment failure acted as a deterrent, leading patients to seek formal medical consultations.

4. DISCUSSION

4.1 Socio-demographic and Environmental Profile

The mean age of 38 ± 12 years observed in Isangi reflects a young and active study population. The average household size (8 ± 3 people) is significantly higher than the national average (approximately 5.3 according to the DHS-DRC), which could

increase the financial burden of healthcare and encourage self-medication. Reliance on unimproved water sources and uncovered simple pit latrines directly exposes the population to fecal-oral diseases. As noted by Mboyo et al. (5) in a similar study in rural Congo, an unsanitary living environment strongly correlates with the recurrence of infectious morbid episodes, driving households toward faster and less expensive care solutions.

The probability of foregoing self-medication in favor of pharmacy-led care increases by 13.8 percentage points among women compared to men. Similarly, the likelihood of turning to street vendors rather than a pharmacy decreases by 10.5 percentage points among women. Women are often more attentive to their own health and that of their families. Studies indicate they have a higher propensity to seek formal care, partly due to their social role as primary caregivers in many contexts (6).

While our survey found a male predominance (56.31%), Norbert's household survey reported a female predominance of 63.9% (2). The probability of not self-medicating rather than using a pharmacy increases by 15.8 percentage points when an individual has at least a secondary education level. This result is consistent with studies showing that education improves the ability to seek information and understand health risks, making individuals more likely to use formal care. Furthermore, the probability of avoiding self-medication increases with a household's standard of living (6).

Interestingly, while the majority of those practicing self-medication have a high level of instruction, more than half of those who consult a physician are less educated (1). This aligns with research indicating that individuals from wealthy households have better access to formal healthcare (6). Another survey conducted in Fez showed that the 18–45 age group (young adults) represented nearly 75% of those reporting self-medication (1).

The female predominance (61.3%) observed in other studies in the DRC and Nigeria contradicts findings from Togo. In agreement with this study, several research projects reveal that self-medication tends to increase with age (7). These conclusions are confirmed by literature indicating that self-medication exists across both sexes, though it is often more pronounced among female clients (1). In France, individuals who most frequently use self-medication—active, healthy, university-educated adults—are also those who most often receive no specialized advice (8). Conversely, individuals from households with modest living standards or where the head of household is unemployed follow a physician's advice more frequently and a pharmacist's advice less frequently when self-medicating (8).

4.2 Prevalence and Nature of Self-Medication

The observed prevalence of self-medication (65.54%) is high, reflecting a practice deeply rooted in the health habits of Isangi. This result is close to that reported by Mapatano et al. (7) in Kinshasa, where prevalence was approximately 68%. The dominance of modern medicines (antibiotics, antimalarials) to treat infectious pathologies is concerning. It echoes the work of Kayiba et al. (7), which warns of the risk of antimicrobial resistance linked to approximate treatment durations (here 6 ± 4 days), which are often incomplete or inappropriate.

Self-medication is practiced by 83% of the population in some regions. Socio-economically, lower income appeared as a significant factor increasing the probability of self-medication, reflecting the impact of precariousness on access to formal care (2). In its 2011 Human Development Report, the UNDP estimated that over 71% of Congolese live on less than one dollar a day. In other words, the poverty in the DRC is a mass poverty affecting all socio-professional categories. Currently, the DRC is undergoing an unprecedented economic crisis; depending on financial means, patients may preferentially turn toward self-medication (3).

A 2009 study by Basu among street youth in Kinshasa showed that 70% resort to self-medication for early symptoms of STIs instead of visiting a health facility, which contributes to microbial resistance against current antibiotics (2). In Goma, a study of 1,000 households showed that 51% of patients resorted to self-medication or purchased drugs at a pharmacy without a prescription during an illness episode (2). Due to poverty, unemployment, and socio-cultural factors, the majority of people self-medicate within the community, as this practice does not require the formalities found in health centers (3).

This practice is used to combat several pathologies or symptoms, most frequently including malaria (30.5%), headaches (18.1%), typhoid fever (9.4%), dysmenorrhea (6.8%), and abdominal pain (7). A study across 14 regions of Great Britain showed that the most frequent symptoms are fever, headache, and digestive upset. Another survey on symptoms managed via self-medication in Africa states that fever, headache, cough, and vomiting are the most common (1).

4.3 Determinants of Recourse to Self-Medication

Multivariate analysis reveals that the perception of the illness's benign nature is the primary driver of self-medication. This finding aligns with the **Theory of Planned Behavior**, where individuals only accept the cost of a medical consultation if the perceived threat to their health is high.

The influence of social circles and past experience confirms the weight of social solidarity and empirical learning in illness management in the DRC. Conversely, therapeutic failure as a limiting factor is a crucial result: the population of Isangi maintains

a certain level of rationality; once self-medication fails, recourse to the formal health system becomes the backup alternative, an observation also made by Onyambuo et al. in Nigeria (2).

Consistent with our results, a study in Congo reported that 87.5% of people believe that minor pathologies or symptoms are suitable for self-medication with a good level of efficacy (1). According to a survey in Benin, lack of money constitutes the primary reason for self-medication for 55.3% of heads of households. Health expenditure funding comes primarily from the activities of the household heads.

Social connections are undeniably the most powerful and recognized source of information for the general population. Knowledge transmitted through family "first-aid" wisdom—often from the mother—includes both traditional "grandmother's remedies" and knowledge acquired through experience (4). The lack of funds for a consultation (67.7%) is the main reason driving individuals to self-medicate (7).

Self-medication represents the primary therapeutic resource in order of importance. This phenomenon has been described in several studies on healthcare demand in Africa, notably in Burkina Faso, where self-medication rates exceeding 55% were reported, as well as in Cameroon and Niger (10). This practice appears to be a custom in the Karisimbi health zone, where minor and ignored major symptoms are treated to minimize hospitalization costs, despite the risks and complications (2).

Low monthly income favored self-medication at 40%; although the Odds Ratio ($OR = 0.945$ $[0.458 – 4.700]$) was close to 1, the significant p-value ($p = 0.001$) and the high proportion observed indicate that low income promotes self-medication. This result is close to that documented in Kenya, where 55% of low-income individuals self-medicate (2). In France, economic incentives and cultural factors limit self-medication among the most modest households (8).

During the two-month survey, 20% of individuals resorted to at least one over-the-counter drug purchase. Self-medication does not result solely from individual choice but is part of a broader context. It calls for a multi-sectoral response, as it is the fruit of economic inequalities, cultural practices, and institutional failures (2).

5. CONCLUSION

This study confirms that self-medication is a predominant health practice in Isangi, affecting over 60% of the population. It is driven by a precarious sanitary environment, average living standards, and social influences. While therapeutic failure eventually drives patients to formal care, the initial reliance on self-medication poses a major risk for medical complications and drug resistance.

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