

Prevalence, Knowledge and Associated Determinants of Auto-Medication in the Limbe Municipality

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Abstract

Introduction: The practice of auto-medication is on the rise in most sub-Saharan countries. The effects of these may be associated with increased drug resistance in the future, complication of the course of a disease, adverse drug interactions etc. Auto-medication is of course a global public health concern, which requires appropriate attention to evade future undesirable effects. **Aim:** The aim of this study was to investigate the knowledge, prevalence and associated determinants of auto-medication in the Limbe municipality. **Method:** This was a community-based cross-sectional study, conducted among 284 enrolled participants in Limbe Health District between January to August 2021. A structured questionnaire-based interview was used to collect data from each study subject. Then, data were categorised and analysed using SPSS version 20 software. **Results:** Majority of 213 (75%) of the participants practised auto-medication. The most frequently reported auto-medication symptoms were fever and headache 202 (71.1%). 95 (15.6%) practised auto-medication because they believed it saved time, meanwhile 5 (0.8%) had the belief that health personnel are too busy in the hospital with lots of patients to serve. Concerning knowledge, 68.9%, 13.1% and 18.2% had grading as Good, Poor and uncertain respectively. 58.3% of participants had a

positive attitude towards auto-medication while 12.7% were indifferent. Factors associated with the use of auto-medication included: Age ($p < 0.05$) with age group 20 - 29 years having the greatest prevalence 120 (75%), Education; with people who had attained university education being the highest 135 (84.9%) with $p < 0.05$. Individuals with households ranging from 3 - 5 persons practised auto-medication most with 86 (78.9%) and $p < 0.05$. **Conclusion:** The prevalence of auto-medication remains increasingly high; there is a need for community sensitization to avert the negatives of such practices. The knowledge on auto-medication is fairly above average.

Keywords

Auto-Medication, Prevalence, Knowledge, Determinants, Limbe Municipality

1. Background

With the emergence and discovery of new medicine for the management of various diseases, the practice of self-care in the form of self-medication has been on the rise. In recent years, lay public are progressively more and more concerned about their health-care by active involvement in decision making. In most societies a person suffering from physical discomfort or emotional distress has a number of ways of helping himself or seeking help from other people [1]. In remote and impoverished areas, western health care is often part of a pluralistic medical system in which it coexists with traditional medicine that includes both self-care with medicinal plants and consultation with specialised traditional healers [2]. The practice of self-medication is prevalent worldwide, especially in developing countries like Cameroon where many drugs are dispensed over-the-counter without prescription [3]. Without realising the repercussions of excess use, people often pop pills for even minor ailments. Irrational use of these drugs causes increased microbial resistance, wastage of re-sources, masked diagnosis, and use of excessive drug dosage and can also lead to drug dependence. On the contrary, if used appropriately, self-medication can be time saving, economical and relieves the burden on health professionals, giving them more time to heal major ailments. Starting from the presupposition that no pharmacologically active substance is innocuous to the body, self-medication could be prejudicial to individual and collective health [4].

The practice of self-medication must be based on authentic medical information to avoid irrational use of drugs which in turn can cause wastage of resources, increased resistance of pathogens to drugs and can lead to serious health hazards like prolonged sufferings, drug reaction and drug dependence [5]. People may practise self-medication for a variety of reasons, like the urge for self-care, sympathy for family members in sickness, lack of health services, poverty, ignorance, misbelief, excessive advertisements of drugs, and availability of drugs in establishments other than pharmacies. The WHO has also pointed out

that responsible self-medication can help prevent and treat ailments that do not require medical consultation and provides a cheaper alternative for treating common illnesses. Moreover, antimicrobial resistance is a current problem worldwide particularly in developing countries like India where antibiotics are often available over the counter without a prescription [6].

The adverse effects of self-medication cannot be over-emphasized. However, some people may engage in the practice of self-medication due to ignorance, poverty and unavailability of health facilities. It is widely believed that human malpractices such as inadequate dosing, incomplete courses and indiscriminate drug use have contributed to the emergence and spread of antimicrobial resistance [7]. The consequence of this is the loss of relatively cheap drugs that will require new drug development which will be more expensive and will further disadvantage patients in developing countries [8]. The rational use of drugs like antibiotics is thus of utmost importance to limit the increase in bacteria resistance [9]. Globally, the prevalence of SMP is inconsistent ranging from 32.5% to 81.5% [10] [11] [12]. The underlying motivation for this study is the prevailing health issues associated with in-appropriate use of drugs, which is increasingly becoming a challenge in our community.

2. Methodology

2.1. Study Design

This was a community based cross-sectional study.

2.2. Study Setting

The study was carried out at Down beach and Newtown-Limbe Cameroon. Limbe (known as Victoria from 1858 to 1982) is a seaside city in the South-West Region of Cameroon. Limbe was founded in 1858 on the southern slopes of Mount Cameroon by the British missionary Alfred Saker. At the 2005 Census, the population was 84,223.

2.3. Study Duration

This study was conducted from January to August 2021.

2.4. Study Population

The target population included adults residing in Down beach and New-Town quarters in the Limbe municipality

2.5. Sampling Method

We used the probability convenience sampling method to recruit our study participants' population. Adults that gave their consent to participate in the study were included. The sample size was estimated using Lorenz's formula.

$$\text{Sample size, } n = (z^2 pq) / d^2$$

where, $q = 1 - p$;

z = standard normal variate, 1.96;

p = expected proportion in population based on previous studies (prevalence). The prevalence of 75% was used in this study which was obtained from a study conducted by Omolase *et al.* to “assess the self-medication amongst general out-patients in a Nigerian community hospital”;

d = absolute error or precision, 5%.

From the above formula, the sample size was 284 adults.

Inclusion criteria

- All adults that had lived for at least six months at down beach and Newtown Limbe.

Exclusion criteria

- We excluded all adults who were morbidly ill and those with hearing and visual disorders.
- Individuals who were busy at the time and couldn't provide adequate time to answer questionnaires till the end.

2.6. Data Collection Tools/Technique

Data was collected using a well structured questionnaire. The questionnaire was structured from reviewing existing literature. Pretesting of the questionnaire was done in some 20 adults in the New Town community to ensure its feasibility. Ambiguities were modified based on the pretest findings. The finalised questionnaire was used to collect data by face-to-face interview with eligible participants. The variables in this research study consisted of use of self-medication (dependent variable) and knowledge, attitude and practice of self-medication (Independent variable). The technique of the data collection was through a self-administered questionnaire with the participant to elicit responses if eligibility for the study were met within the period of data collection. Individuals who were unable to read and write were assisted by the investigator to fill their questionnaire. The questionnaire was made up of 5 sections. Section one (1) was on the socio-demographic factors of the respondent and made of seven (7) questions with options for the respondent to choose one option. These questions include; Name, age, Gender, marital status, educational level, income level, employer of respondent. Section two (2) is on self-medication habits with nine (9) questions. The first six (6) questions were made of short statements for the respondent to mark a cross (X) on either always, most of the time, often, sometime or rarely as appropriate to them. The next 3 questions (question 7 - 9) were made of short questions and options for the respondent to select more than one choice. Section three (3) was on the knowledge of self-medication and made of seven (7) statements (questions) for the respondent to place a cross (X) in the box on either right, wrong or uncertain as appropriate to them. Section four (4) was on attitude towards self-medication and made of six (6) questions (statements) for the respondent to place a cross (X) in the box on either strongly

agree, agree, uncertain, disagree, or strongly disagree. Section five (5) was on the practice of self-medication and made up of eight (8) questions (statements) for the respondent to place a cross (X) in the box on either right, wrong or uncertain as appropriate to them.

2.7. Ethical Approval

Ethical clearance was obtained from the Faculty of Health Sciences, University of Buea. Administrative authorization was obtained from the Regional Delegation of Public Health for the South West Region. A written consent form was signed by each participant willing to partake after going through the participant's information sheet. All the information was recorded anonymously and confidentiality was assured throughout the study.

2.8. Study Procedure

After signing an informed consent form, participants were administered a pre-tested survey questionnaire and any ambiguity was modified based on pre-test findings.

2.9. Data Processing and Analysis

Data was entered and analysed using Statistical Package for Social Science (SPSS) version 17. Descriptive statistics such as frequencies and percentages were presented using tables, graphs, and texts. P-value less than 0.05 was used to determine variables significantly associated with Self-medication practice. The prevalence of self-medication was obtained from the answer provided in the questionnaire by all the participants that answered "yes" to having given medication to anyone that fell ill at home. Knowledge of self-medication was obtained from answers provided on the questionnaire. All participants who ticked "right" with the statement, were considered to have "good knowledge", those who ticked "wrong" were considered to have "poor knowledge" while participants who ticked uncertain with the statement were considered to be "uncertain" with self-medication practice. Attitude was analysed based on the option made by participants against the statement. Those who agreed or strongly agreed were considered to have "negative attitude", participants that disagreed or strongly disagreed were considered to have "positive attitude" while those who said to be uncertain were considered to be "indifferent" on the practice of self-medication. The practice of self-medication was based on the options ticked by participants against the statements in the questionnaire. Those who agreed or strongly agreed were considered to have "good practice", participants that disagreed or strongly disagreed were considered to have "poor practice" while those who said to be uncertain were considered to be "uncertain" on the practice of self-medication. All this data was printed and kept safe in a clean dry cupboard and accessibility was restricted from all except the investigator. The softcopy of the document was converted to a pdf file and backed up on a google drive and into a USB flash disk.

3. Results

A total of 284 questionnaires were printed and administered (100% distribution) and all the 284 questionnaires were received (100% response rate).

3.1. Sociodemographic Data

This study involved 284 participants of varied age ranges, ≤ 19 years 23 (8.1%), 20 - 29 years 120 (42.3%), 30 - 39 years 60 (21.1%), 40 - 49 years 58 (20.4%) and ≥ 50 years were 23 (8.1%). The total number of individuals per household; 1 - 2 persons 73 (25.7%), 3 - 5 persons 109 (38.4%), 6 - 7 persons 68 (23.9%) and ≥ 8 persons were 34 (12.0%). For educational level, the majority 159 (56.0%) had been to the university as shown on **Table 1** below.

3.2. Prevalence of Self-Medication

Among the participants, 213 (75.0%) said yes to self-medication at home when sonhmeone was sick, while 71 (25.0%) said no to self-medication. Also, 151 (71.4%) of participants said they self-medicated when they have fever and headache, 23 (10.7%) said when they had cough and cold, 8 (3.7%) said acidity, 4 (1.7%) said when they have nausea and vomiting, 4 (1.7%) said when they had diarrhoea and 23 (10.8%) said others (**Figure 1**).

Table 1. Sociodemographic data.

Demographic factors	Frequency	Percentage	
Age group (years)	≤ 19	23	8.1
	20 - 29	120	42.3
	30 - 39	60	21.1
	40 - 49	58	20.4
	≥ 50	23	8.1
Number of household occupants	1 - 2	73	25.7
	3 - 5	109	38.4
	6 - 7	68	23.9
	≥ 8	34	12.0
Education	University	159	56.0
	College	41	14.4
	Primary	22	7.7
	Secondary	16	5.6
	Vocational	41	14.4
	Other	5	1.8

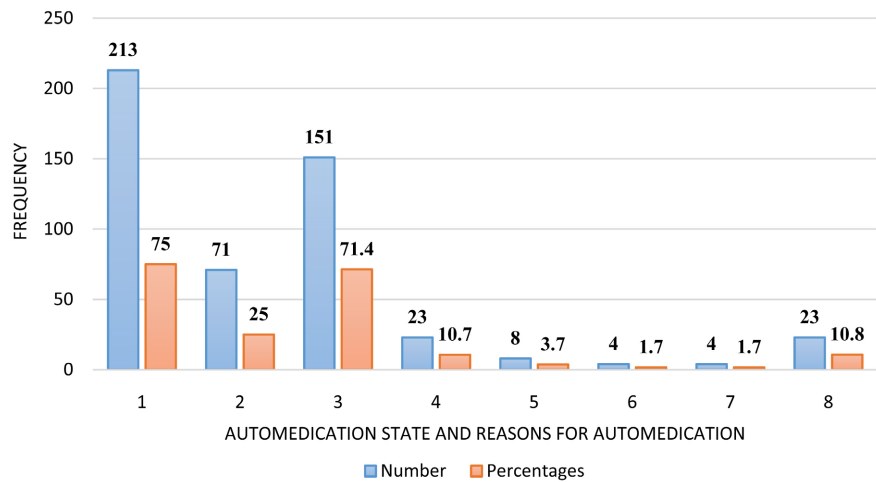


Figure 1. Prevalence of self-medication and rational for automedication.

Distribution of Drug Types Used and Motivation of Usage

For self-medicated drug used by the participants, majority 204 (18.9%) said paracetamol and the least was dexamethasone 5 (0.5%) (**Figure 2**).

Concerning the reason for self-medication, the majority 95 (15.6%) said it saves time and the least 5 (0.8%) response of the participants was that doctors were too busy with many patients (**Figure 3**).

3.3. Knowledge of Self-Medication

The various responses of the participants to test their knowledge are represented on **Table 2** below.

Overall, 68.9% of the participants had good knowledge, 13.1% of participants had poor Knowledge while 18.2% of participants were uncertain (See **Figure 4**).

3.4. Attitude of Self-Medication

The attitude of the participants towards self-medication varied in this study, as some agreed, others disagreed and others were uncertain. These attitudes were represented on **Table 3** below.

Overall, 58.3% of participants had a positive attitude on self-medication, 12.7% were indifferent while 29.0% had a negative attitude (**Figure 5**).

3.5. Factors that Promote the Practice of Self-Medication on Adults in Limbe Community

A chi-square test was done to check for factors that promoted self-medication among households of the Limbe community, there was a statistically significant relationship between age and self-medication ($p = 001$) the age group < 19 years had the highest case of self-medication (100%). Also, there was a significant association between the total number of family members staying at a house and self-medication ($p = 0.001$), households with 6 - 7 members had the highest rate of self-medication (100%). There was also a significant association between the highest level of education and self-medication, primary and secondary education

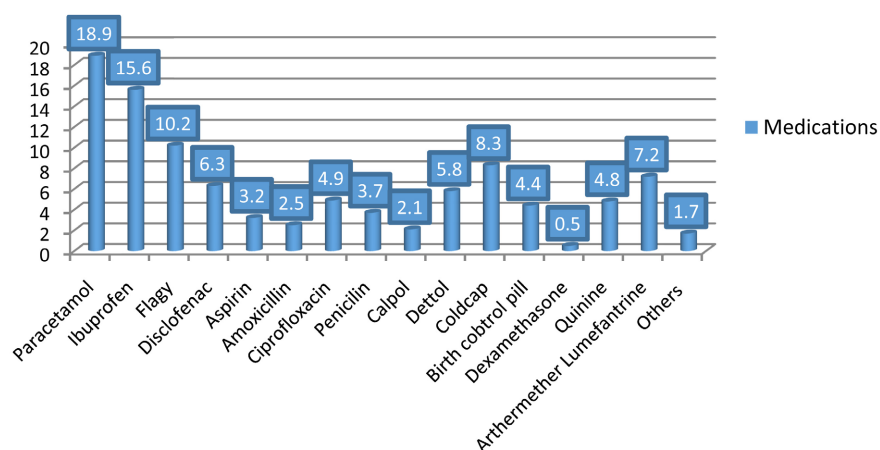


Figure 2. Self-medications used.

Table 2. Knowledge on self-medication.

Elements of knowledge/responses		Frequency (F)	Percent (%)
Nonprescription drug requires basic knowledge about drug action.	Right	244	85.9
	Wrong	11	3.9
	Uncertain	29	10.2
When sic it is always necessary to seek the services of a health professional.	Right	243	85.6
	Wrong	24	8.5
	Uncertain	17	6.0
Non-prescribed drugs can lead to side effects possibly leading to death.	Right	177	62.3
	Wrong	30	10.6
	Uncertain	70	27.1
Non-prescribed drugs can lead to drug resistance.	Right	155	54.6
	Wrong	48	16.9
	Uncertain	81	28.5
Continuous use of non-prescribed drugs can cause dependency.	Right	130	45.8
	Wrong	81	28.5
	Uncertain	73	25.7
Non-prescribed drugs lead to complication of disease state.	Right	182	64.1
	Wrong	47	16.5
	Uncertain	55	19.4
The reading and understanding of leaflet in the drug pack is important before taking medicine.	Right	233	82.0
	Wrong	17	6.0
	Uncertain	34	12.0

Table 3. Attitude of self-medication.

Statement/response		Frequency (F)	Percentage (%)
It is important to give someone medication at home as soon as he/she becomes sick.	Agree	198	69.7
	Uncertain	35	12.3
	Disagree	51	18.0
Giving a medicine at home is a good practice for preventing development of disease.	Agree	182	64.1
	Uncertain	22	7.7
	Disagree	80	28.2
We will always give family members medicine as soon as he/she falls sick without delay.	Agree	187	65.8
	Uncertain	34	12.0
	Disagree	63	22.2
We can treat any family member at home by buying medicine from the shop.	Agree	138	48.6
	Uncertain	41	14.4
	Disagree	105	37.0
When any family member fall sick, there is nothing wrong with using leftover medicine to treat him/her.	Agree	123	43.3
	Uncertain	43	15.1
	Disagree	118	41.5
Giving medication at home is a way important step in keeping household healthy.	Agree	166	58.5
	Uncertain	42	14.8
	Disagree	76	26.8

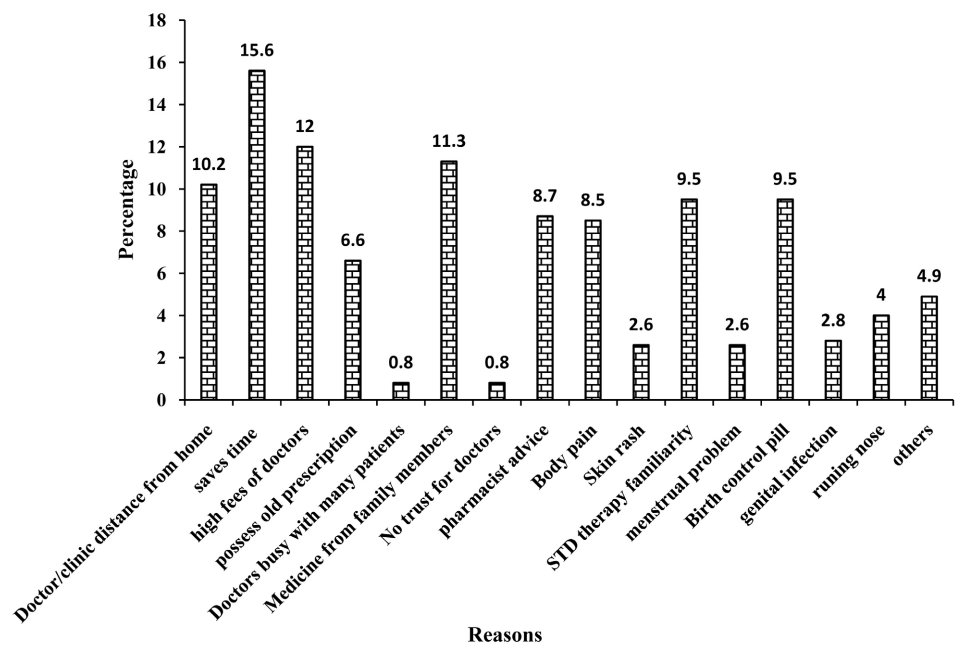


Figure 3. Reasons for practice of auto-medication amongst participants.

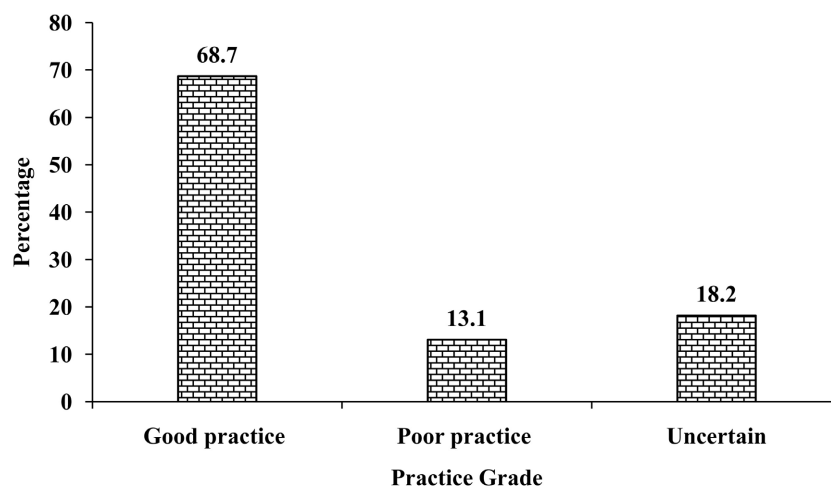


Figure 4. Knowledge on self-medication.

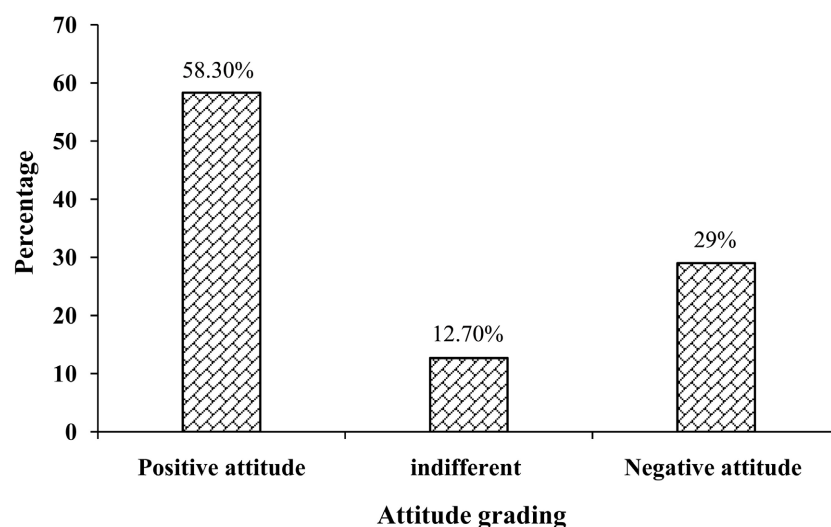


Figure 5. Attitude on self-medication.

was found to be the greatest (100%) promoter of self-medication. The type of illness also promoted self-medication ($p = 0.001$) as those with acidity and diarrhoea (100%) were most likely to self-medicate. There was a statistically significant association between all the elements of knowledge on self-medication ($p < 0.05$) and self-medicating, most of the participants responded that it was right. (Table 4)

3.6. Practice of Self-Medication

The practice of self-medication among the participants varied in this study, as some agreed, others disagreed and others were uncertain. These practices of self-medication are represented on Table 5 below.

The overall practice of self-medication showed that 46.0% of participant had good practice on self-medication, 46.0% were uncertain while 8.0% had poor practice of self-medication (Figure 6).

Table 4. Factors that promote the practice of self-medication on adults in Limbe community.

Demographic factors	Frequency	Percentage on self-medication	p value
Age (yrs)	≤19	23	23 (100%)
	20 - 29	120	90 (75.0%)
	30 - 39	60	43 (71.7%)
	40 - 49	58	52 (89.7%)
	≥50	23	5 (21.7%)
Total number in household	1 - 2	73	49 (58.9%)
	3 - 5	109	86 (78.9%)
	6 - 7	68	68 (100%)
	≥8	34	10 (29.4%)
Education	University	159	135 (84.9%)
	College	41	23 (56.1%)
	Primary	22	22 (100%)
	Secondary	16	16 (100%)
	Vocational	41	12 (29.3%)
	Other	5	5 (100%)
Associated symptom	Fever and headache	202	167 (82.7%)
	Cough and cold	30	12 (40%)
	Acidity	11	54 (45.4%)
	Nausea and vomiting	6	6 (100%)
	Diarrhoea	6	6 (100%)
	Others	29	17 (58.6%)

Table 5. Practice of self-medication.

Statement	Response	Frequency	Percentage
Whenever we treat anybody at home, we always ensure that the medicine is safe.	Agree	245	86.3
	Uncertain	23	8.1
	Disagree	16	5.6
We only use self-medication on condition that we have good ability to diagnose/treat symptoms.	Agree	240	84.5
	Uncertain	22	7.7
	Disagree	22	7.7
When the condition are similar to previous sickness then we can use nonprescription drug.	Agree	173	60.9
	Uncertain	39	13.7
	Disagree	72	25.4

Continued

We can always use nonprescription drugs when someone recommend for.	Agree	160	56.3
	Uncertain	72	25.4
	Disagree	52	18.3
Whenever we use self- medication, we always ensure that we know him/her to use the medicines.	Agree	184	64.8
	Uncertain	66	23.2
	Disagree	34	12.0
Before we use a drug, we must have information on how to monitor the effect of the drug.	Agree	228	80.3
	Uncertain	34	12.0
	Disagree	22	7.7
Whenever we do self-medication, we must have information on how to monitor the effects of the drug.	Agree	151	53.2
	Uncertain	100	35.2
	Disagree	33	11.6
We seek a professional soon after anybody becomes sick.	Agree	237	83.5
	Uncertain	18	6.3
	Disagree	29	10.2

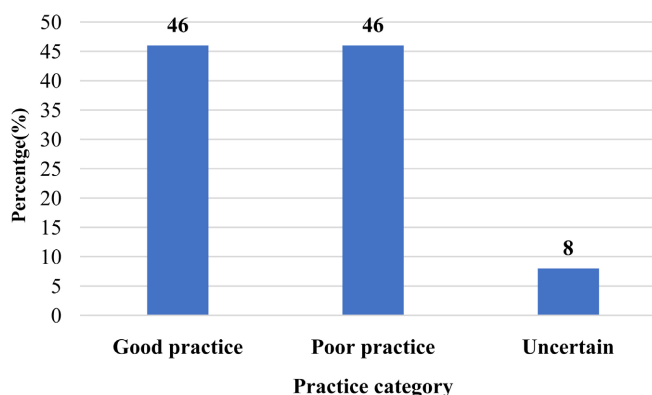


Figure 6. Practice of self-medication.

4. Discussion

The practice of self-medication has long been in existence worldwide. The situation continues to increase particularly in developing countries where high prevalence has been reported [13]. The responsible practice of self-medication could be life saving and cost effective in areas where inadequate provision of health services do exist. However, self-medicating has its drawbacks as it may lead to unintended effects if inappropriately used. In this study we found a high prevalence of self-medication, 75.0% which is similar to studies reported in the Northern part of Uganda [14], Pakistan amongst university students [15] and amongst pregnant women in Uyo, Nigeria [16]. Lower prevalence has been reported in Ghana [17], and Ethiopia [18]. In Ethiopia in particular, the study was

conducted amongst university students who are believed to be more educated and abreast with medication use and side effects thus the lower prevalence.

Fever/Headache were found to be the most frequent symptom for which the participants self-medicated. This matched similar reports from Ethiopia, India and Pakistan [19] [20] [21]. For these symptoms, Paracetamol was the most commonly used medication. This is consistent with findings from an assessment carried out amongst medical, pharmacy and health science students in Gondar University, Ethiopia [22]. Paracetamol is a very common medication, it was the first drug to be made available over the counter (OTC) in modern times [23]. These findings however contradicted the results reported from a study amongst pregnant women in the Northwest region of Cameroon, which found antiemetics to be the most common drug used for self-medication [24].

Amongst the several reasons for why participants choose to self-medicate, saving time was the most frequent. In sub-Saharan Africa access to healthcare is still a major problem. Currently, at least one-sixth of the population lives more than two hours away from a public hospital and one in eight people is no less than one hour away from the nearest health center [25]. Related findings were made in Punjab and Islamabad, Pakistan where access to hospital (24/7) was a powerful trigger for self-medication practices. Provision of appropriate health facilities can significantly constrain self-medication practices [26] [27].

Out of the 284 participants in this study, 68.9% had good knowledge on the practice of self-medication. This finding is higher than 9.7% in Somaliland where they assessed the knowledge, perception and practices of self-medication among households of children under five years in Borama district [28]. This significant knowledge gap could be due to the fact that more participants in our study had attained at least a secondary level of education and had more access to internet services. This finding agrees with a similar study conducted in the Northern Indian population where those who lived in Urban settings were more likely to have good knowledge as compared to their rural counterparts [29]. Over 58.3% of the household had a positive attitude towards self-medication, which is in line with 54.6% in Somaliland.

The study result revealed that 46.0% of the households had good practice to self-medicate, which was higher than the 1.4% study in Somaliland. This may be due to Lack of knowledge and education on self-medication. Also increased health care cost and increased availability and use of the internet has increased the practice of self-medication.

From this study, A chi-square test was done to check for factors that promoted self-medication amongst adults in Limbe community, there was a statistically significant relationship between age and self-medication ($p < 0.05$) the age group < 19 years had the highest case of self-medication (100%). This could be explained by the fact that this age group consists of teenagers who are more likely to be under supervision and or parental guidance and can be instructed or given medications in the face of health challenges.

In addition, there was a significant association between the total number of family members staying at a house and self-medication ($p = 0.05$), households with 6 - 7 members had the highest rate of self-medication (100%). This could be explained by the fact that a higher number of people in a household comes with higher cost for healthcare services thus the majority will go for the relatively cheaper over the counter auto medications. There was also a significant association between the highest level of education and self-medication, primary and secondary education were found to be the greatest (100%) promoter of self-medication. The type of illness also promoted self-medication ($p = 0.05$) as those with acidity and diarrhoea (100%) were most likely to self-medicate. There was a statistically significant association between all the elements of knowledge on self-medication ($p < 0.05$). This was in agreement with a study in Somaliland with $p < 0.05$.

5. Conclusion

The study reveals a high prevalence of self-medication among household individuals in the Limbe community. Adults in Newtown and Down Beach Limbe are knowledgeable in the practice of self-medication with a good proportion of them self-medicating because it saves time. Participants preferred to automedicate irrespective of the severity relating to a state of ill health.

5.1. Recommendations

To the problems identified in this study, the following proposed suggestions have been made:

To health personnel

- Health care providers should educate patients on the dangers of self-medication. Such messages should be extended to the community at large periodically by government health ministries.

To the government

- Government should enforce relevant legislation which limits the sales of drugs without prescription to only a few relatively harmless over the counter ones.
- Create awareness about existing health facilities so that patients will know where to go when the need arises thereby minimising the potential resort to self-medication.
- Further research should be carried out in the rural area of the Limbe community, South West region and Cameroon as a whole assessing the awareness of both modern and traditional medicine in order to be able to make a definitive conclusion.

5.2. Limitations

- This study was conducted in an urban setting which didn't show the practices of the rural area.

- The study assessed conventional medicine and did not include practices of traditional medicine.
- The study might also be prone to recall bias as a result of self-reporting of the participants for their last 6 months experiences.

Author's Contributions

TPB, AFE and NFA conceived and designed the study; all authors participated in the data collection process; TPB, NFA, ZBF performed data analysis and interpretation; TPB, and NFA wrote the first draft of the manuscript and AGE, DDY, ACT, ZBF, DNA, TBB reviewed and corrected the manuscript. TPB, NFA, ACT, DDY, TBB and DNA constituted the questionnaire for the study. All authors did proofreading and inputting of data into Excel sheets. All authors approved the final copy.

Conflicts of Interest

Authors declare no conflict of interest.

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