OPEN ACCESS
Freely Available Online

OpenAccessPub

JOURNAL OF ADVANCED PHARMACEUTICAL SCIENCE AND TECHNOLOGY
ISSN NO: 2328-0182

Review article

DOI: 10.14302/issn.2328-0182.japst-20-3526

Assessment of Self Medication Practice and Drugs Storage Among South Sudanese Community in Addis Ababa, Ethiopia

Christo Achuil[1], Anbessa Bekele[1,*]

[1]Pharmacy School, Health Institute, Jimma University, Ethiopia

Abstract

Background: Self-medication (SM) can be defined as the use of drugs to treat self-diagnosed disorders or symptoms, or the intermittent or continued use of a prescribed drug for chronic or recurrent disease or symptoms. A number of individuals in developing countries do not attend physicians for their illnesses; instead they commonly use self-medication. Self-medication could be using drugs existing in home like over the counter (OCT) drugs, traditional medicine, prescription only drug. Self-medication is not always bad, hence for the over the counter drugs it is beneficial. Inappropriate storage and use of medicines at home could have a direct influence on public health, the environment and the health-care services and it increases the risk of self-medication.

Objective: To assess the practice of self-medication and drug storage among South Sudanese community in Addis Ababa.

Materials and Methods: A cross sectional study design was conducted in Addis Ababa city from April 22 to April 26/2019. Data was collected by semi structure-questionnaire consisting questions on general demographic, socio-economic as well as on perceived illness/ symptoms in the past four weeks and actions taken for it. The data collected was screened before it is analyzed. Data analysis was done by using calculator.

Results: From the total 297 respondents 286 (96.2%) had reported self-medication in the last one month before the study period. The most common types of ailments for which the respondents reported to have practiced self-medication were cough, cold and sore throat 90(30.3%), followed by headache 66(22.2%), diarrhea 52 (17.5%) ,abdominal pain 47(15.8%), fever 21(7.07%) and vomiting 10(3.3%). The reasons given for self-medication were; the illness was minor 226(76%) and previous experiences with similar ailments 31 (10.4%) were found to be the two major reasons given by the respondents for self-medication in this study. The majority of the respondents 242(81.4%) who practiced self-medication obtained information on self-medication from friends and 29(9.7%) obtained information from family members. The most frequently used group of drugs used for self-medication were analgesics/antipyretics 177(59.5%) and antimicrobial which account 75(25.2%) each followed by antihelmenthics 24(8.08%).The main source of drugs for SM was in pharmacy 220(74.07%) followed by leftover drugs 41(13.8%) while drug retail outlet, and neighbors and relatives were the suppliers to 12.13% respondents each.

Conclusion and Recommendation: A significant number of respondents (96.2%) use S/M from those perceived illness. Majority of the self-medicated individuals used due to minor illness. The most common category of drugs used was analgesics/antipyretics and antimicrobials. And the reason reported for using S/M was minor illness and previous experience with the illness. Most of respondents obtained drugs easily from pharmacy. So, pharmacies are the major sources of drugs used for S/M. The increased of drugs storage to treat

similar illness/symptom and drugs left over from previous use contribute to the increase in the S/M practice. Common drugs store reported by respondents who store modern drugs were analgesic/antipyretic. Most of the respondents stored the drug in locked cabinets.

A lot is need to be done in educating the public including the health care providers on the type of illnesses that can be self-diagnosed and self-treated, the type of drugs to be used for S/M, and the proper use of drugs. During dispensing of drugs emphasis should be given to all drug consumers and dispenser because of resistance and side effects of drug is the main challenging problem even in the world. Food, Medicines and Healthcare Administration and Control Authority (FMHACA) needs to effectively implement laws on drug handling and dispensing so as to take necessary measures on illegal providers of drugs.

Corresponding author: Anbessa Bekele, Pharmacy School, Health Institute, Jimma University, Ethiopia,Tel: +251 -910-81-78-53; Email: anbebake@gmail.com
Citation: Christo Achuil, Anbessa Bekele (2020) Assessment of Self Medication Practice and Drugs Storage Among South Sudanese Community in Addis Ababa, Ethiopia. Journal of Advanced Pharmaceutical Science And Technology - 2(3):11-25. https://doi.org/10.14302/issn.2328-0182.japst-20-3526

Keywords: Self-medication, drug storage

Received: Aug 22, 2020 **Accepted:** Sep 18, 2020 **Published:** Sep 21, 2020

Editor: Nyemb NyunaÑ, Institute of Medical Research and Medicinal Plants Studies, PO Box 3805 Yaoundé, Cameroon.

Introduction

Self-medication (SM) can be defined as the use of drugs to treat self-diagnosed disorders or symptoms, or the intermittent or continued use of a prescribed drug for chronic or recurrent disease or symptoms. In practice, it also includes use of the medication of family members, especially where the treatment of children or the elderly is involved [1]. SM is a way of providing self-care. Normally people take medicines for manageable ailments like headache, toothache, fever, sore throat and similar routine problems. The practice has been observed worldwide, developing and developed countries with varying prevalence and varying after effects. Self-medication is a common practice worldwide and the irrational use of drugs is a cause of concern. It involves the use of medicinal products by the consumer to treat self-recognized disorders or symptoms, or the intermittent or continued use of a medication prescribed by a physician for chronic or recurring disease or symptoms [2].

There is a lot of public and professional concern about the irrational use of drugs. In developing countries like India, easy availability of a wide range of drugs coupled with inadequate health services result in increased proportions of drugs used as SM compared to prescribed drugs [3].

Although, over the counter (OTC) drugs are meant for self-medication and are of proved efficacy and safety, their improper use due to lack of knowledge of their side effects and interactions could have serious complications, especially in extremes of ages (children and old age) and special physiological conditions like pregnancy and lactation. There is always a risk of interaction between active ingredients of hidden preparations of OTC drugs and prescription medicines, as well as increased risk of worsening of existing disease pathology [4].

Over the years of ongoing practice, SM has developed resistance to certain disease causing organisms and hence the situation is alarming as certain resistant strains has emerged and the treatments have been more ineffective. SM exists not only with pain killers but now days it includes the antibiotics as well as cough syrups which are not recommended to be taken without prescription [5].

Using non-prescription drugs could be beneficial to patients, healthcare professional, the pharmaceutical industry and governments, provided these drugs are used rationally. Apart from community education, safety and efficacy of OTC drugs must be assured, so that

these products could be safe even in the event of improper use. For registration as an OTC drug, specific efficacy trials may be conducted in real SM situation. Food and Drug Authority (FDA) has strongly advocated that labeling of the OTC drugs should be easy to understand by the consumer and should contain the list of active ingredients, warnings, directions and inactive ingredients [6].

Storing medicines at home might increase the risk of self-medication, and some authors have reported a high frequency of exchange of self-medication between families (members). Inappropriate storage and use of medicines at home could have a direct influence on public health, the environment and the health-care services and it increases the risk of self-medication [7].

Statement of the Problem

Although most self-medication with non-prescription drugs may result in the desired outcome, perhaps are not uncommon. Several studies indicated that there are risks such as misdiagnosis, use of excessive drug dosage, prolong duration of use, drug interaction [8].

Major problems related to self-medication is wastage of resources, increased antimicrobial drug resistance particularly in developing countries and serious health hazards such as adverse reaction and prolonged suffering [9].

The availability of the more complex drugs such as antibiotics without prescriptions is a source of great concern. Antimicrobial resistance is a current problem worldwide particularly in developing countries where antibiotics are often available without a prescription. Some OTC medicines may also have severe interactions with prescribed medicines. Other hazards of self-medication may also include drug dependence and addiction; dosing over [10].The use of prescription only medications without the knowledge of physicians can be less beneficial or even be dangerous for the patient [11].

Inappropriate storage and use of medicines at home could have a direct influence on public health, the environment and the health-care services and it increases the risk of self-medication. Storing medicines at home might increase of self-medication, and between family members [12].

Literature Review

Unlike the developed countries, illegal providers of drugs are common in developing countries, which are a further source of irrational and potentially dangerous drug use [13].In a number of developing countries many drugs are dispensed over the counter without medical direction. In this case, self-medication provides a lower cost-alternative for people who cannot afford the fee of medical services. However, increased access to non-prescription medicines may encourage patients to believe that there is a drug treatment for every ailment [14].

Another study conducted in Khartoum state, Sudan, on self-medication showed that from 1,200 individuals included in study 81.8% of respondents used medicines including herb without a medical consultation with in two months prior to the study period. Proprietary medicines alone were used 28.3%, herb alone by 20.7%, while 32.8% had used both [15].

Cross-sectional study in south-east Islamic Republic of Iran in 2010 revealed that, many householders (53.6%) reported that they practiced self-medication, and the frequency of reuse of physician prescribed antibiotics was high. Analgesics were the most common medicines stored at home, followed by adult cold remedies and antibiotics. The refrigerator was the most common place for storing medicines (50.6%). There was a significant association between self-medication and educational level but not with age, sex, marital status, occupation and type of insurance. Better public knowledge and information about storage and risks of reuse of prescription medications is needed [16].

Research on self-medication practice in Addis Ababa January-February shows that: - The most frequency requested category of drugs were analgesic/ antipyretics (32.1%) antimicrobials (26.4%) GI drugs (17.7%) respiratory drugs (9.7%) and ORS (0.6%). Sources of information for self-medication 39% of drugs consumers reported that they obtained advice from health care providers (physicians, nurses, health assistants) but without formal prescription. However 23.5% of them said they were advice by friends, relatives those do not have background in health profession. Third (15.4%) sources of advice were

reported to be the pharmacists or other personnel working in pharmacies. The other group of respondents (about 20%) received no advice but had information on the drug from the label, leaflet or promotion materials [17].

The majority of the respondents 64(75.3%) had good knowledge about the side effects of the drugs. More than half of the respondents reported their illness was improved after self- medication. From the self-medicated respondents, 85(51.8%) and 79(48.2%) of the respondents used self-medication with modern drugs and home remedies (Herbs), respectively. Regarding the source of drugs used for self-medication, majority of the respondents 40(47.1%) patronized drug vendor while pharmacy, shops, left over drugs from previous illness and neighbors and relatives were the suppliers to 19 (22.4%), 14(16.5%), 7(8.1%)5(5.9%) respondents, respectively. Cost of modern health care (44.5%) and mildness of the illness (31.1%) were the two major reasons given by the respondents for self-medication [18].

Another cross-sectional study conducted in Mekelle from February to March 2013 revealed that the most frequently reported illnesses or symptoms of illnesses that prompted self-medication of study participants were headache/fever (20.7%), gastrointestinal diseases (17.3%) and respiratory tract infections (15.9%)%), eye disease (14.0%). Self-medicated respondents provided reasons that 21.7% of them believed the disease was not serious; 20.7% of them have had prior experience to the illness and/or the drug; 20.2% of them were of the opinion that it was less expensive in terms of time and money; 17.0% of them believed that it was an emergency care; and 16.9% of them requested medications for prevention of known or unknown illness or symptoms of illnesses. The most commonly used category of drugs for self-medication were analgesics/antipyretics (20.8%), GI drugs (17.5%), respiratory drugs (14.9%), ORS (14.2%), vitamins (11.1%) and antimicrobials (8.4%). The three most usual sources of advice/information for self-medication were pharmacists (22.9%), healthcare providers such as doctors, nurses and health assistants, but without formal prescriptions (20.6%), and friends, neighbors or relatives (18.5%). Nevertheless, 12.8% of the respondents obtained information by reading drug related materials such as labels, leaflets or promotional materials while 12.5% of them were suggested by traditional healers [19].

A community-based cross-sectional study of 1200 households conducted during January and March 2006 in Assendabo town revealed that the prevalence of self-medication is 39.2%. The commonest illnesses that led to self-medication were headache (23.1%), fever (40.6%), cough and cold (11.2%) eye disease (4.2%), and diarrhea (3.5%). In addition, people practiced self-medication for illnesses they perceived as of low severe type. The most common reasons for the practice of self-medication was its relative less cost. Drug vendors and private clinics were identified as the main sources of modern pharmaceuticals for rampant practice of self-medication. Drugs for self-medication were obtained from neighbors or in the sick person's house as leftover drugs from the past prescriptions [20].

Significance of the Study

Due to lack of proper health education to the population, the practice of SM and improper drug storage is becoming one of the public health problems.

The rising level of resistance of infectious agents on the drug effect can be related to SM as one main factor and Poor drug storage is one of the reasons that can decrease the effectiveness of the drug. Therefore, the aim of this study will be to assess the prevalence of self-medication and drug storage pattern and the finding of this study may be used as input for intervention by the authorities in this critical area and it may also serves as a base line data for further study.

Objectives

General Objective

To assesses self- medication practice and drug storage among South Sudanese community in Addis Ababa, Ethiopia.

Specific Objectives

- To determine the prevalence of self-medication and to identify the reason for self-medication
- To identify commonly treated illness by self-medication and to identify commonly used drugs for self-medication

- To identify source of modern medicine for self-medication and to assess drugs storage pattern

Materials and Methods

The Study Area and Study Period

The Study was conducted in Addis Ababa, Capital city of Ethiopia. Addis Ababa is 346.2km from Jimma University. The city lies a few miles west of east African Rift which splits Ethiopia into two. Ethiopian ethnic groups are represented in Addis Ababa. Foreigners from many other countries and south Sudanese reside in Addis Ababa, Ethiopia.

The total population of the South Sudanese community in Addis Ababa is 1325 which is composed of 500 households. The study was conducted from April 22/2019-25/2019.

Study Design

A cross-sectional study was conducted using semi structured questioner consisting of general socio-demographic, socio- economic, perceived illness and action taken to overcome the illness and practice of drug storage among South Sudanese community in Addis Ababa, Ethiopia.

Population

Source Population

The source population was the entire Community of South Sudanese in Addis Ababa, Ethiopia.

Study Population

The study population was all households of South Sudanese in Addis Ababa, Ethiopia.

Sample Population

The sample population was households of South Sudanese in Addis Ababa, Ethiopia which are selected using systematic random sampling technique.

Sample Size and Sampling Technique

The required sample size was determined by using single population proportion formula by considering 50% estimated proportion of self-medication among South Sudanese community because there is no such study conducted among South Sudanese in the study area.

$$n= \frac{Z^2 pq}{d^2}$$

Where;

n= the sample size

Z=reliability coefficient for desired interval (CI) for 95% = 1.96

p = proportion of self-medication 0.50

Q= 1-P =0.50

d= desired interval (degree of precision) = 0.05

Then $n= \frac{(1.96)^2(0.50)(.50)}{(0.05)^2} = 384$

Since the study population is less than 10,000 correction formula was used to get the final sample size (n*f*).

n*f*=*n*/1+*n*/*N* =384/1+384/1325=297

Where

n*f*= final sample size,N=total study population

10% non-response was added, so sample size was 297

Therefore sample size of 297was considered.

Since systematic random sampling technique was used, sampling interval was determined as follows.

*K=N/*n*f*

=500/297=2

Therefore the data was collected every 2nd houses and the first house was selected by lottery method.

Study Variables

Dependent Variables

- Action taken by individual with perceived illness
- Reason for self-medication
- Category of drugs used for self-medication
- Source of information for using self-medication
- Practice of drug storage
- Reason for drug storage

Independent Variables

- Age

- Sex
- Marital status
- Income

Data Collection Instrument & Data collector

Semi-structured questionnaire was used to collect the necessary information. Accessories materials like, pencil, chalk, binder, eraser and sharpener were used. The data was collected by investigator.

Data Collection Technique

The data was collected by interviewing the respondents using semi structured questionnaire.

Quality Assurance

Before the respondent asked the question, information was given to them about how they understand the words written and the idea about what the questionnaire says. They were also informed about the objective of the study, so that every respondent will understand the question well and give an attention (with responsibility).

Data Processing and Analysis

The collected data was checked for completeness of information and then it was analyzed manually and presented in the form of frequency table, graphs & charts.

Ethical Consideration

An official letter was written from Jimma University Community Based Education (CBE) office to South Sudan Embassy in Addis Ababa, Ethiopia to get permeation for data collection. Verbal consent from the respondent was obtained. The Respondents was convinced on confidentiality of the information that they will give.

Dissemination of Result

The final finding of the study will be disseminated for concerned bodies 'i.e. Institute of health science, School of pharmacy and Jimma University Community Based Education Office.

Results and Discussion

Results

This study was conducted on a total population of 1325 residing in 500 households. Figures in Table 1 show the socio-demographic and economic background of the 297 respondents interviewed. 227(76.4%) were males and 70 (23.5%) were females. 11 (3.7%) were attending primary school, 34(11.4%) were attending secondary school and 252(84.8%) were in college or university. Regarding marital status, 147(49.4%) of the respondents were married. From the total respondents, 252(84.8%) respondents were students and 29(9.7%) were government employee.

From the total 297 respondents shown in figure 1 below, 196 (65.9%) had reported symptoms of illness in the last one month before the study period.

From the total 297 respondents shown in figure 2 below, 286 (96.2%) had reported self-medication in the last one month before the study period.

In this study shown in figure 3 below, the most common types of ailments for which the respondents reported to have practiced self-medication were cough, cold and sore throat 90(30.3%), followed by headache 66(22.2%), diarrhea 52(17.5%) ,abdominal pain 47 (15.8%), fever 21(7.07%) and vomiting 10(3.3%) each as shown in bar chart below.

As shown in Figure 4 below the reasons given for self-medication were; the illness was minor 226 (76%) and previous experiences with similar ailments 31 (10.4%) were found to be the two major reasons given by the respondents for self-medication in this study.

As shown in the figure 5 below the majority of the respondents 242(81.4%) who practiced self-medication obtained information on self-medication from friends and 29(9.7%) obtained information from family members.

The most frequently used group of drugs used forself-medicationwere analgesics/antipyretics 177 (59.5%)and antimicrobial which account 75(25.2%) each followed by antihelmenthics 24(8.08%) as shown in figure 6 below.

As shown in figure 7 below, Regarding the source of drugs used for self-medication in figure below, main source was in pharmacy 220(74.07%) followed by leftover drugs 41(13.8%) while drug retail outlet, and neighbors and relatives were the suppliers to 12.13% respondents each.

Table 1. Socio-demographic characteristics of South Sudanese community in Addis Ababa, Ethiopia from April 2019

Socio-demographic characteristics		**Frequency**	**Percentage**
Age	18-24	95	31.9
	25-34	112	37.7
	35-44	70	23.5
	>45	20	6.7
	Total	**297**	**100**
Sex	Male	227	76.4
	Female	70	23.5
	Total	**297**	**100**
Marital Status	Married	147	49.4
	Single	135	45.4
	Divorced	10	3.3
	Widow/Widower	5	1.6
	Total	**297**	**100**
Educational status	Illiterate	0	0
	Primary(1-8)	11	3.7
	Secondary(9-12)	34	11.4
	College/University	252	84.8
	Total	**297**	**100**
Occupation status	Students	252	84.8
	Government worker	29	9.7
	Merchants	16	5.3
	Other	0	0
	Total	**297**	**100**
Income (Eth. Birr)	1000-5000	252	84.8
	5000-10000	11	3.7
	10000-15000	20	6.7
	15000-20000	9	3.03
	>20000	5	1.6
	Total	**297**	**100**

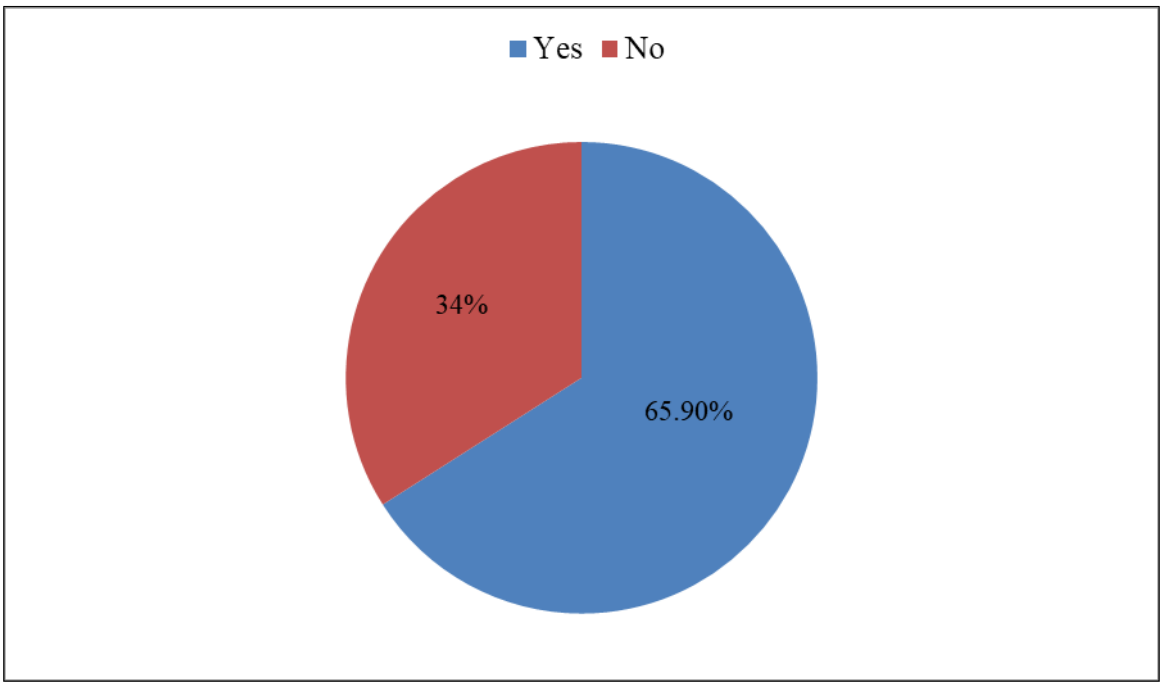

Figure 1. Show respondents reported symptoms of illness in the last one month among South Sudanese community in Addis Ababa, Ethiopia from April 2019.

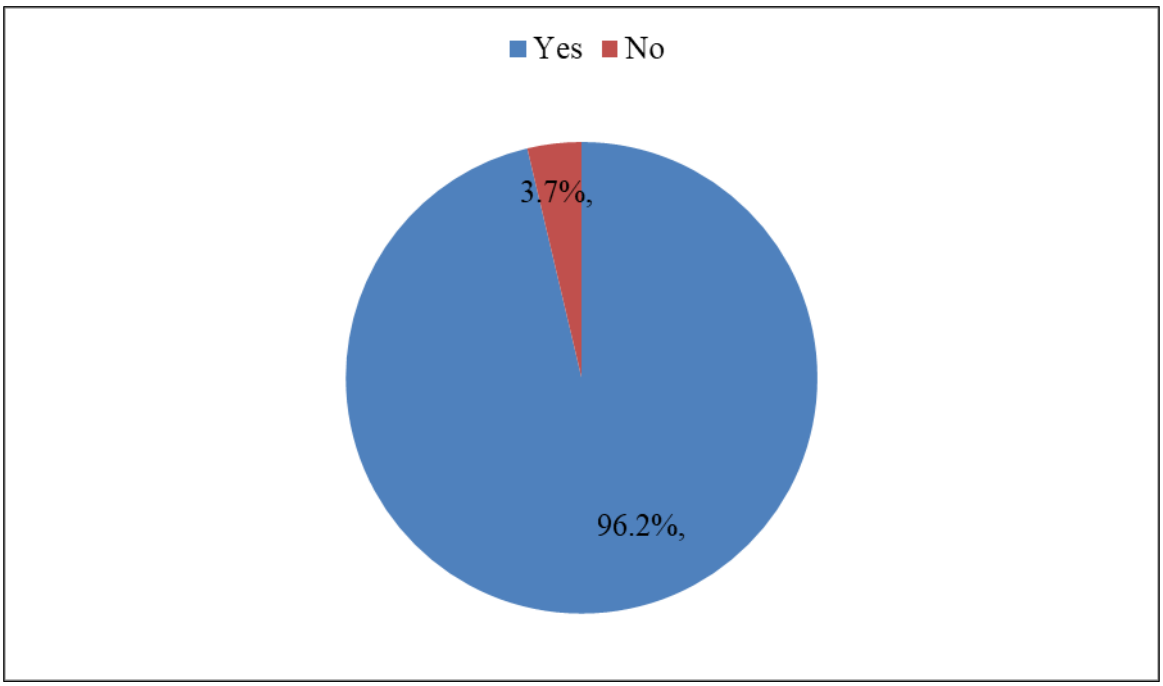

Figure 2. Show respondents reported take self-medication in the last one month among South Sudanese community in Addis Ababa in April 2019.

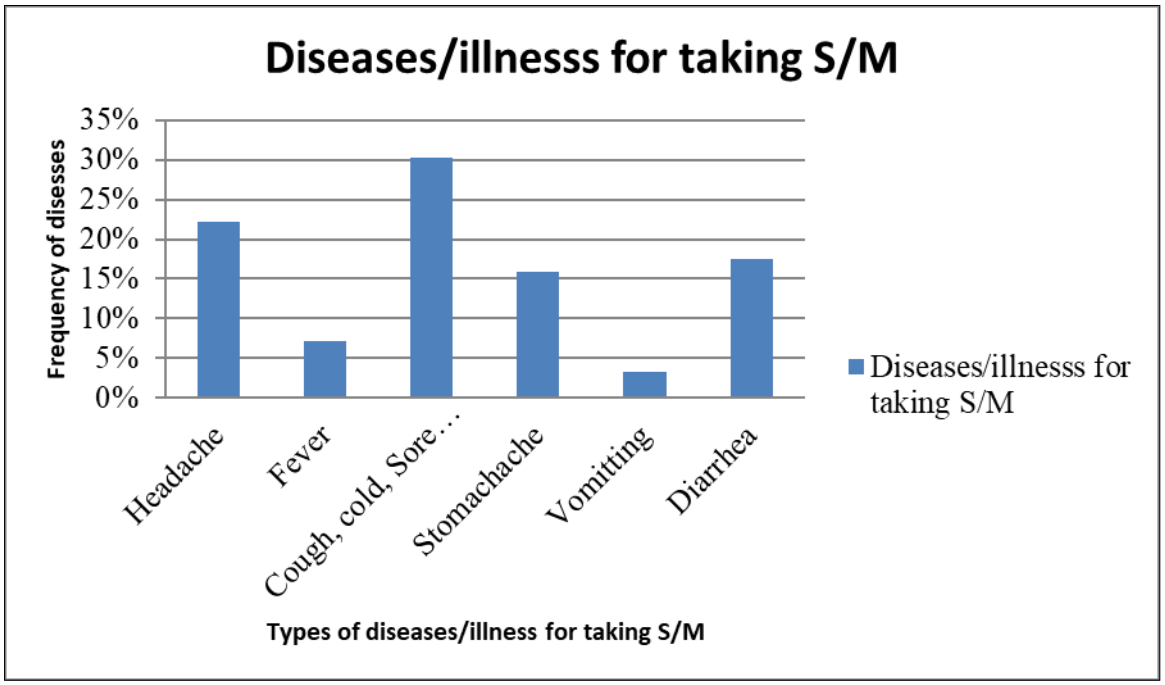

Figure 3. Frequency of reported symptoms of illness, among South Sudanese community in Addis Ababa, Ethiopia in April 2019.

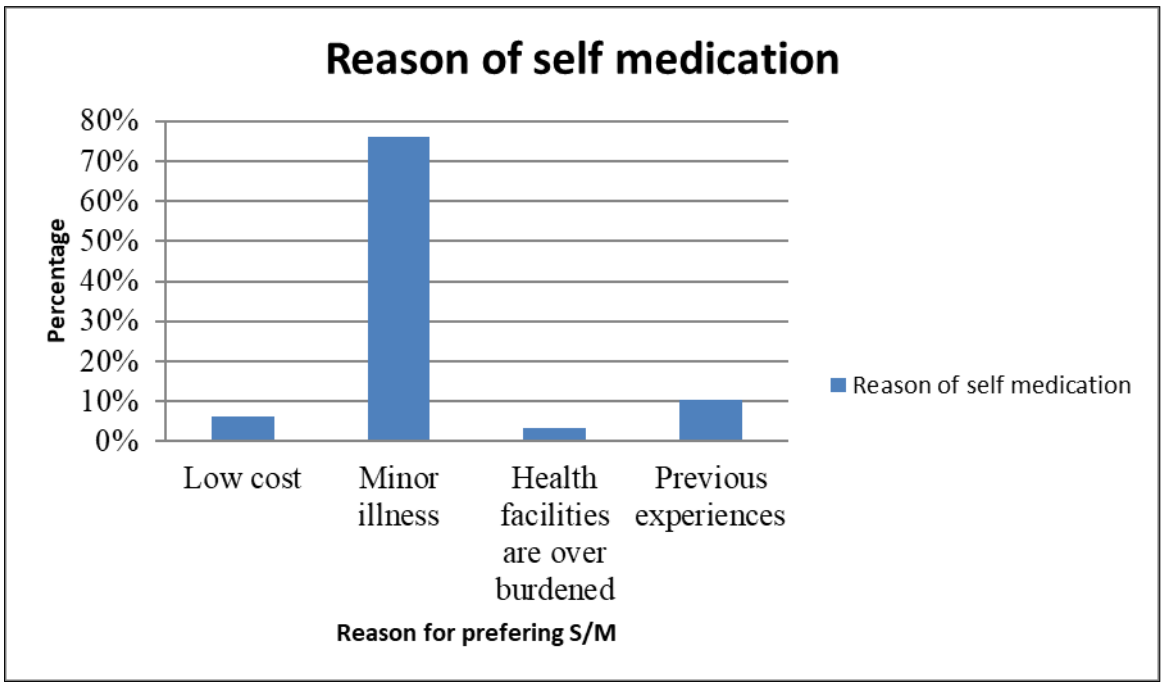

Figure 4. Show reason for preferring self-medication by sick persons among South Sudanese community in Addis Ababa, Ethiopia in April 2019.

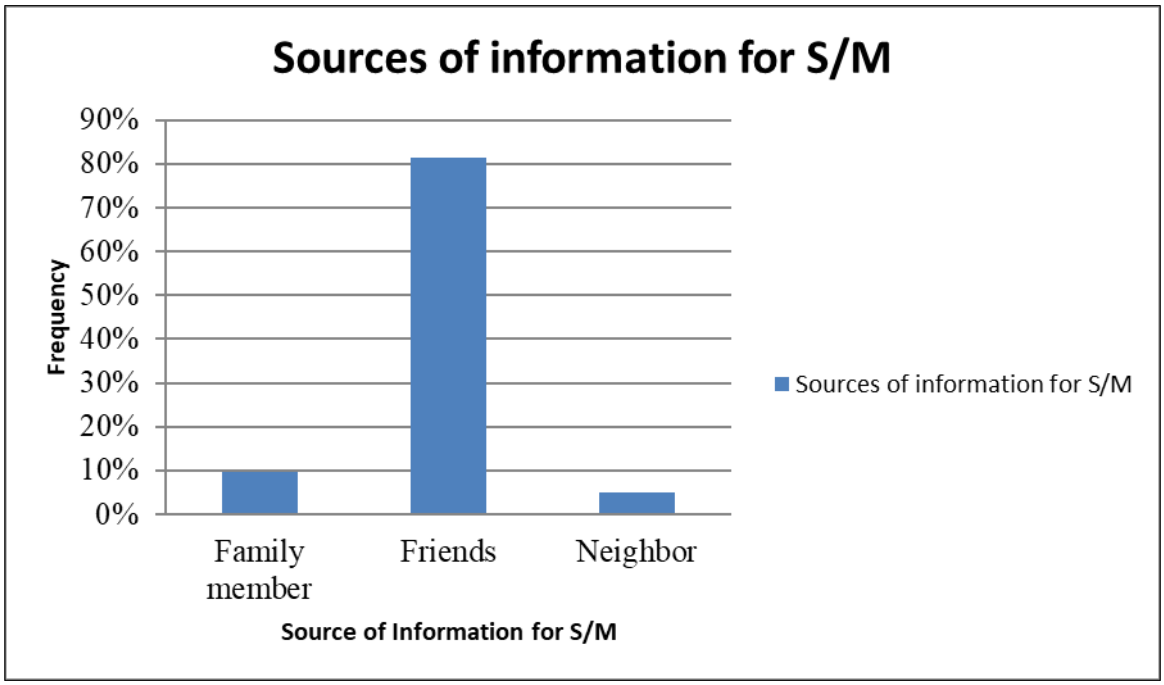

Figure 5. Show Source of information for self-medication for choosing S/M among South Sudanese community in Addis Ababa in April 2019.

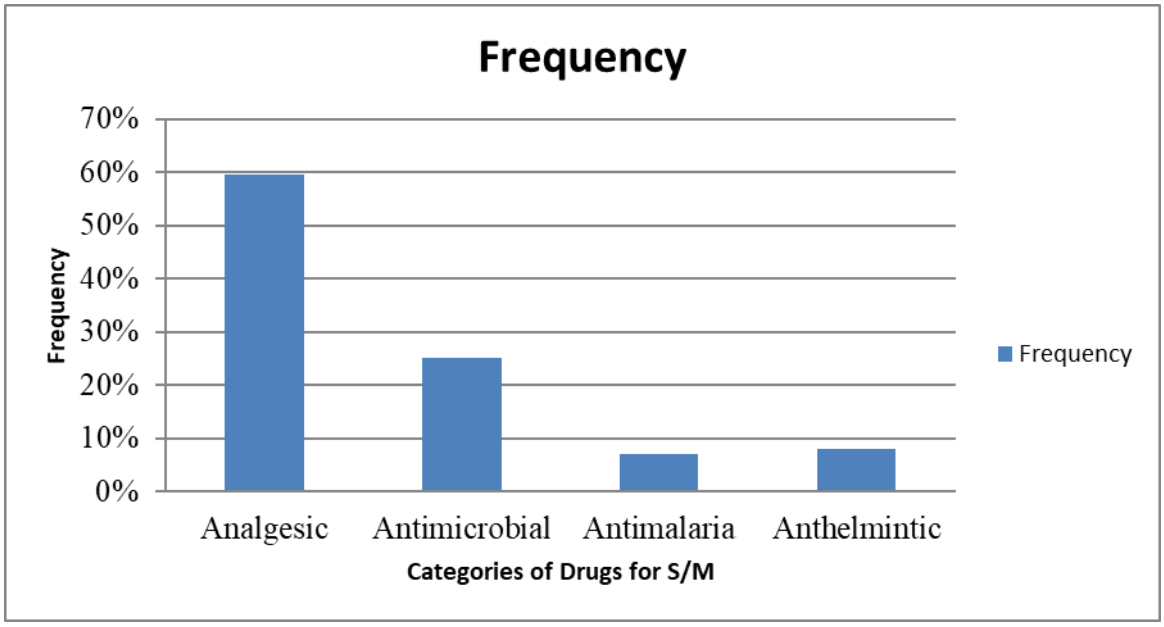

Figure 6. Category of drugs agents used for self-medication by sick individuals among South Sudanese community in Addis Ababa, Ethiopia in April 2019.

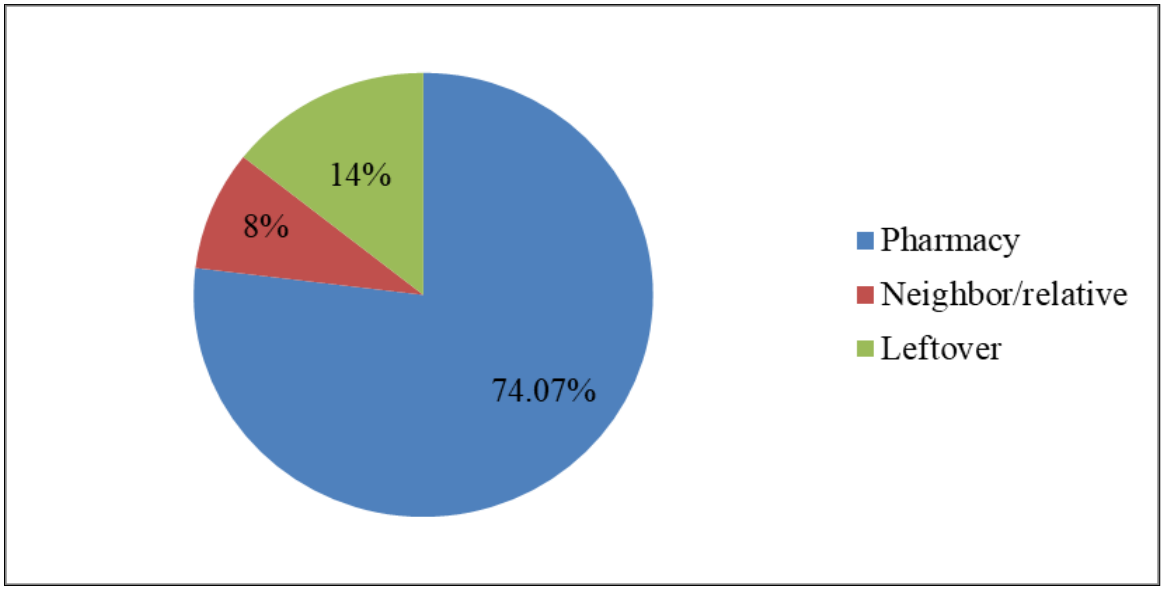

Figure 7. Source of information modern medicine among South Sudanese community in Addis Ababa, Ethiopia in April 2019.

In this study shown in figure 8 below, from the total 297 respondents interviewed, 286(96.2%) reported drug storing practice in the house.

As shown in figure 9 below, the total respondents who practice drug storage in the house 235 (79.1%) store drugs to treat similar illness , 41(13.8%) store leftover drug from previous prescription drug, whereas 15(5%) store drugs for emergency cases.

As show in figure 10 below, the most commonly stored drugs are analgesics/antipyretics 177(59.5%) followed by antimicrobial 75(25.2%) and anthelmintic which is 24(8.08%).

As shown in figure 11 below, the most places the store modern drugs are in locked cabinet, open shelf and on the table.

Discussion

The practice of self-medication is widespread all over the world especially urban and educated population (1). WHO (World Health Organization) is promoting practice of self-medication for effective and quick relief of symptoms without medical consultations and reduce burden on health care services, which are often understaffed and inaccessible in rural and remote areas (3). In this study, the prevalence of self-medication among respondents was found to be 96.2%. This seems to be highly prevalent as compared to the studies done in Kolladiba town [18] and Assendabo town [20].

The commonest illnesses that led to self-medication in this study (headache, fever, and cough, cold, sore throat) were also reported similarly in Jimma, Mekele and Assendabo towns (16, 19, 20). This was partly because of the studies done in South India and kolladiba town also pointed out fever, headache and cough and cold as the main ailment that necessitated self-medication intervention (4, 18).

Like the results of a similar study in Mekele, in this study, people used self-medication mainly because of they have had prior experience to the illness and/or the drug (19). In contrary to this, the results of studies done in Kolladiba and Assendabo towns revealed that the most common reasons for the practice of self-medication was its relative less cost (18, 20). Relative the illness was minor was the main reason for the practice of self-medication in this study. As WHO noted, self-medication provides a cheap alternative to people who cannot afford to pay medical practitioners. Thus, self-medication is often the first response to illness among people with low income (20).

In this study, the three most usual sources of information for self-medication were friends, family

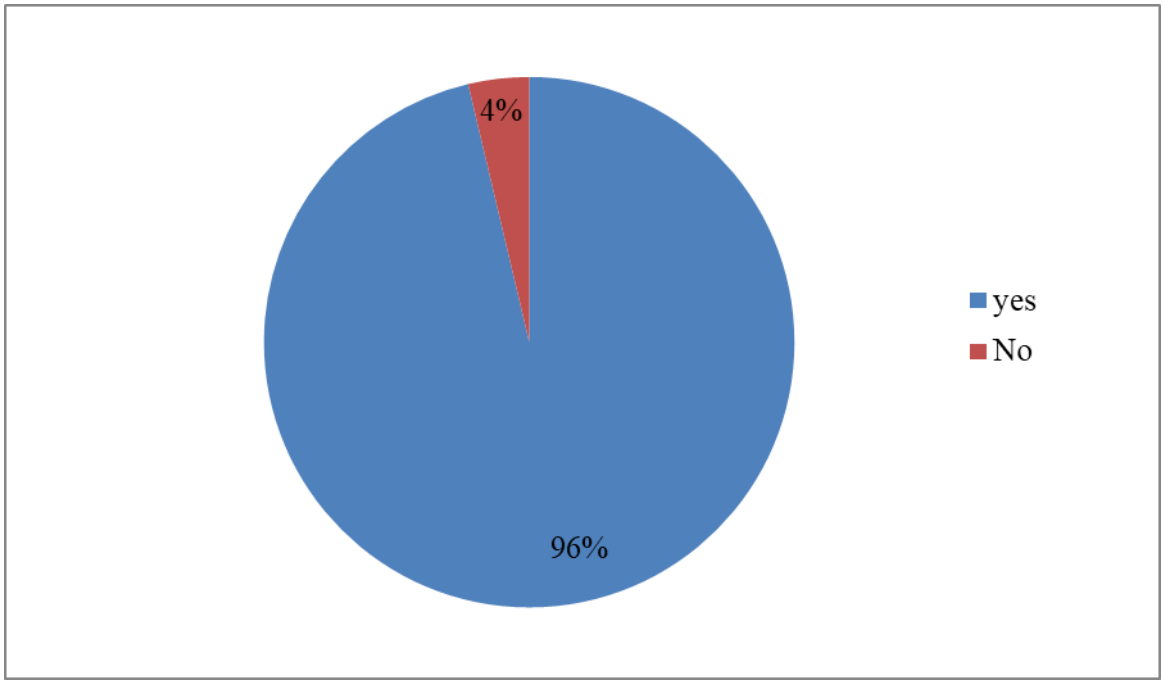

Figure 8. Show the distribution of clients that store modern drugs among South Sudanese community in Addis Ababa, Ethiopia in April 2019.

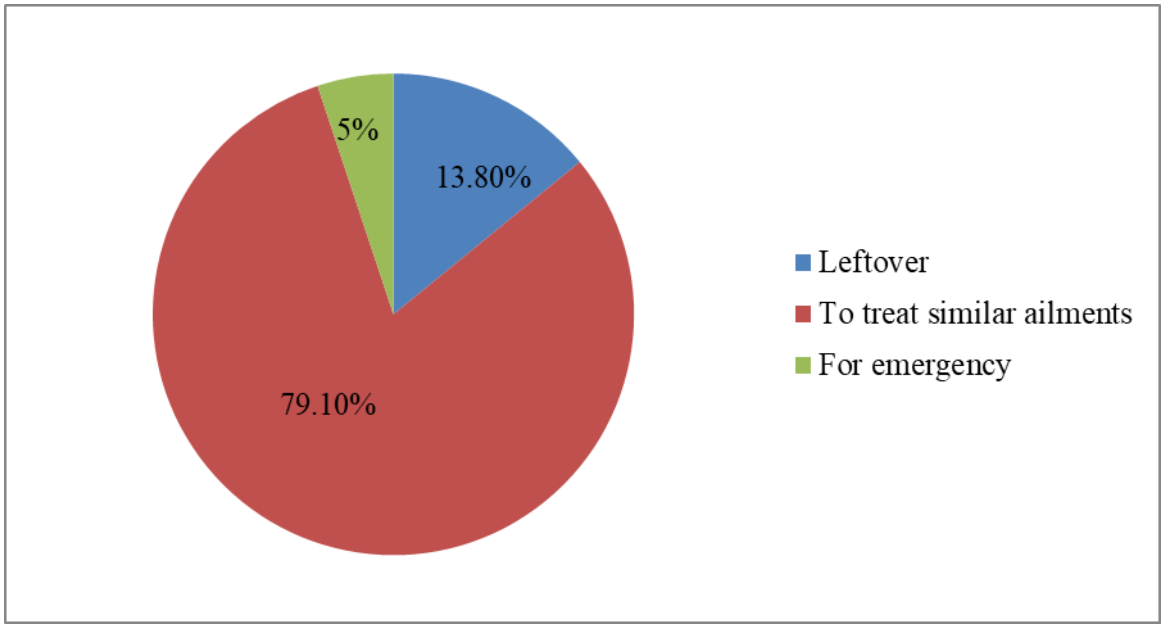

Figure 9. Show reasons they store modern drugs among South Sudanese community in Addis Ababa, Ethiopia in April 2019.

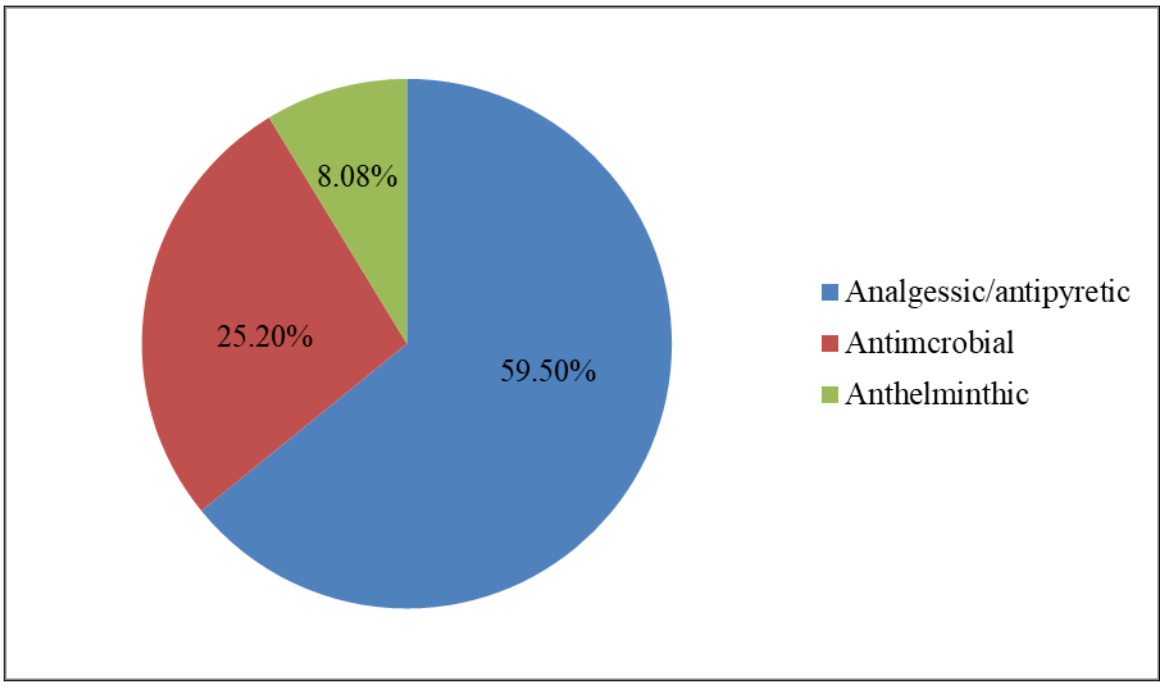

Figure 10. Show the type of drugs store in the house among South Sudanese community in Addis Ababa, Ethiopia in April 2019.

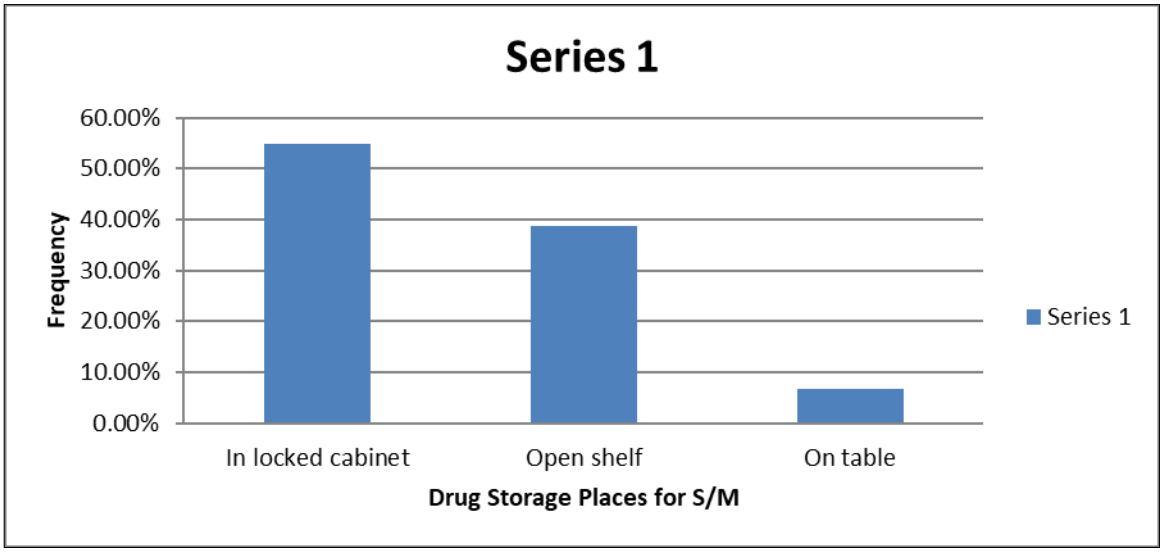

Figure 11. Show the place they store modern drugs among South Sudanese community in Addis Ababa, Ethiopia

members, self- experience and neighbor, unlike the result of similar study in Mekele where pharmacists, healthcare providers such as doctors, nurses and health assistants served as sources of information for self-medication, but without formal prescriptions (19).

Conclusion and Recommendation

Conclusion

A significant number of respondents (96.2%) use S/M from those perceived illness. Majority of the self -medicated individuals used due to minor illness. The most common category of drugs used was analgesics/ antipyretics and antimicrobials. And the reason reported for using S/M was minor illness and previous experience with the illness. Most of respondents obtained drugs easily from pharmacy. So, pharmacies are the major sources of drugs used for S/M. The increased of drugs storage to treat similar illness/symptom and drugs left over from previous use contribute to the increase in the S/M practice. Common drugs store reported by respondents who store modern drugs were analgesic/ antipyretic. Most of the respondents stored the drug in locked cabinets.

Recommendation

A lot is need to be done in educating the public including the health care providers on the type of illnesses that can be self-diagnosed and self-treated, the type of drugs to be used for S/M, and the proper use of drugs. During dispensing of drugs emphasis should be given to all drug consumers and dispenser because of resistance and side effects of drug is the main challenging problem even in the world. Food, Medicines and Healthcare Administration and Control Authority (FMHACA) needs to effectively implement laws on drug handling and dispensing so as to take necessary measures on illegal providers of drugs.

Acknowledgement

We would like to express our great appreciation to Jimma University, Institute of Health Sciences for facilitating this research.

References

1. Rushi N. Pandya, Kunal S. Jhaveri, Falgun I. Vyas, Varsha J. Patel.Prevalence, pattern and perceptions of self-medication in medical students. International Journal of Basic &Clinical Pharmacology.2013; 2 (3): 275-280
2. Gupta &Gupta, Apeejay.Prevalence of Self medication: A Review.Journal of Management Sciences and Technology. Oct- 2014; 2(1):*2347-5005*
3. Bennadi et al. self-medication profile of dental patients in Tumkur, South India. International journal of pharmacy and pharmaceutical sciences. 2013; 5(3)
4. Balamurugan E and Ganesh K.Prevalence and Pattern of Self Medication use in Coastal region of South India. British Journal of Medical practitioners. September2011; 4(3)
5. Gupta & Gupta, Apeejay-Journal of Management Sciences and Technology 2(1), Oct-2014. (ISSN-2347-5005)35.
6. R. Sharma, U. Verma, C. L. Sharma, B. Kapoor. Self-medication among urban population of Jammu city Indian. J Pharmacol. February 2005; 37 (1): 37-45
7. B. Foroutan and R. Foroutan.Household storage of medicines and self-medication practices in south-east Islamic Republic of Iran.EMHJ. 2014; 20 (9):547-553
8. TenawA.andTsig G. Assessment of consumers drug knowledge in Addis Ababa: Across sectional survey. Ethiopian journal of health science 2004; 14(2): 71-80p.
9. Bennadi et al. self-medication profile of dental patients in Tumkur, South India. International journal of pharmacy and pharmaceutical sciences.2013; 5(3).
10. Bushra Ali Sherazi, KhawajaTahirMahmood, Fatima Amin, Mariam Zaka, MunazaRiaz, Ayesha Javed.prevalence and measure of self medication: a review.J. Pharm. Sci. & Res. 2012; 4(3): 1774-1778
11. Teferra A. and Alemayehu W. Self-Medication in three towns of northwest Ethiopia. Ethiopian journal of health development. 2001; 15 (1): 25-30
12. B. Foroutan and R. Foroutan.Household storage of medicines and self-medication practices in south-east Islamic Republic of Iran.EMHJ. 2014; 20

(9):547-553

13. Solomon Worku and Abebe G/Mariam.Practice of self-medication in Jimmatown.Ethiop.J.Health Dev. 2003; 17(2):111-1169)
14. Bushra Ali Sherazi, KhawajaTahirMahmood, Fatima Amin, Mariam Zaka, MunazaRiaz, Ayesha Javed.prevalence and measure of self medication: a review.J. Pharm. Sci. & Res. 2012; 4(3): 1774-1778
15. Awad Al, Eltayeb IB, Capp PA, self-medication practice in Khartoum state, Sudan 2006 Apri;62 (4):317-24p.
16. Solomon Worku and Abebe G/Mariam.Practice of self -medication in Jimmatown.Ethiop.J.Health Dev. 2003; 17(2):111-116
17. TenawA.andTsig G. self-medication practice in Addis Ababa: A prospective study. Ethiopian journal of health science 2004; 14(1): 1-11p.
18. Solomon Abrha, FantahunMolla, WondimMelkam.Self -medication Practice: the Case ofKolladiba Town, North West Ethiopia. International Journal of Pharma Sciences and Research (IJPSR), ISSN. Oct 2014; 5 (10): 670-677
19. Eticha T, Mesfin K (2014) Self-Medication Practices in Mekelle, Ethiopia. PLoS ONE 9(5): e97464. doi:10.1371/journal.pone.0097464
20. Sulemanetal.Assessment of self-medication practices in Assendabo town, Jimma zone, southwestern Ethiopia. /Research in Social and Administrative Pharmacy 5 (2009) 76–81.