

Assessment of Self-Medication Practice and Drug Storage on Private Pharmacy Clients in Jimma town, Oromia, South west Ethiopia

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Abstract: 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 (OTC) drugs, traditional medicine, prescription only drug. Self medication is not always bad hence for the over the counter drugs it is beneficial. Most of the time drugs stored on unsafe place that may result in decrease in drug's efficacy.

The objective of this paper is to assess self-medication and drug storage conditions on private pharmacy clients in Jimma town.

A community based cross sectional prospective study had been conducted in Jimma town from June 28/2013_ July 14/2013 GC. The data had been collected by semistructure-questionnaire consisting questions on general demographic, socio-economic as well as on perceived illness/ symptoms in the past one year and actions taken for it and administered to respondents of 405 systematically selected client. The collected data had been analyzed by using calculator.

Keywords: self-medication practice, drug storage, private pharmacy clients

1. INTRODUCTION

Background

Self-medication can be defined as obtaining and consuming drugs without the advice of a physician either for diagnosis, prescription or surveillance of treatment [1]. 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 self-medication compared to prescribed drugs [2]. Although, OTC (over the counter) 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 implications, especially in extremes of ages (children and old age) and special physiological conditions like pregnancy and lactation [3, 4]. 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.

Previous studies have shown the prevalence of self-medication as 3% in urban population and 17% in rural population in India [5]; where as 12.7% to 95% in other developing countries [2, 6, 7]. In class-A NSAIDS (non -steroidal anti-inflammatory drugs) were widely administered as self-medication followed by ORS (oral rehydration solution) anti motility drugs, cough/ cold remedies and antibiotics; whereas, cough and cold remedies were widely used drugs in class-B followed by NSAIDS, vitamins, ayurvedic drugs, H2 blockers/ proton pump inhibitors/ antacids and ORS/ anti motility drugs.

Present study also indicated low knowledge about dose/ duration, side effects and interaction of commonly used drugs with reports of the previous studies [8, 9].

The knowledge regarding dose/ duration of drug therapy, adverse drug reaction and drug interaction was even in developed countries like USA, it has been seen that the misuse of non-prescription drugs causes tens of thousands of unnecessary hospitalizations each year [10].

In a drug utilization study in USA, it was found that medications that are contraindicated in pregnancy were used at unexpectedly high rate as OTC drugs in obstetric population [11].

There was a trend towards use of ayurvedic and homeopathic drugs in chronic illnesses like joint pains, acid peptic disease, bronchial asthma, obesity, impotence, baldness and female infertility. Moreover, herbs and homeopathic drugs were considered safe and devoid of adverse effect but the risk of possible drug interactions is always with their use [12]. However no serious side effect was reported with drugs used as self-medication except for few episodes of epigastria discomfort, sedation, rashes and diarrhea with the use of NSAIDS, cough and cold remedies and antibiotics respectively in both the classes.

In the present study doctors and paramedics/ chemists were found to be the most common source of drug information in are in concordance with earlier reports [13, 14]. Drug advertisements were also an important source of drug information. Although, patient's use of advertised medicines could have important health benefits if used appropriately in the early stages of disease, many advertised products are 'lifestyle drugs', symptomatic treatments and may relieve only the discomfort and are likely to result into increased pharmaceutical practice in India have called attention to the role played by pharmacists and pharmacy attendants in fostering self-medication and medicine experimentation among the public [15]. It is argued that the economic rationale and the symbiotic relations that exist between doctors, medical-representatives, medicine wholesalers and retailers, need to be more closely scrutinized by that advocating rational drug use.

Patient satisfaction with the healthcare provider, cost of the drugs, delusional level, socioeconomic factors, age and gender are the important factors influencing self-medication [16].

Self-medication, using non-prescription drugs, could be beneficial to patients, healthcare professional, the pharmaceutical industry and governments, provided these drugs are used rationally. For registration as an OTC drug, specific efficacy trials may be conducted in real self-medication situation. 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 [10].

Easy availability of wide range of drugs without prescription of registered practitioner in our country is the major factor responsible for irrational use of drugs as self-medication, thus resulting into impending health problems

(antimicrobial resistance, increased load of mortality and morbidity) and economic loss. The need for promoting appropriate use of drugs in health care system is not only because of the financial reasons with which policy makers and manager are usually most concerned, but also for health and medical care of patients and the community. There is need for authorities to make the existing laws regarding OTC drugs strong to ensure their rational sale and use. Moreover pharmacist and physician must be encouraged to report any adverse events. Periodic studies on the knowledge, attitude and practice of self-medication may give insight into the changing pattern of drug use in societies.

Statement of the Problem

Although most self-medications with non-prescription drugs may result in the desired outcome, mishaps are not uncommon. Several studies indicated that there are risks such as misdiagnosis, use of excessive drug dosage, prolonged duration of use, drug intersections [17].

Improved availability of drug if combined with poor compliance by patients and inappropriate self-medication may result in wastage of resources, increased resistance of pathogens, serious health hazards, adverse reactions and indeed prolong suffering [18].

Self-medication by the use of traditional medicines whose efficacy and toxicity is not well known sufficiently could be even more dangerous than modern drugs [19].

Self-treatment of malaria result in miss used alternative diagnosis and delay in appropriate treatment. It also leads to the promotion of drug resistance plasmodium falcifarum because of the wide spread use of antimalarial in case of under dosing and risks associated with potential toxic doses of these drugs [20].

Although many countries categorize medicine as either OTC or prescription only, research data indicate that sale of self- prescription products (i.e. buying prescription only rug without prescription) is for more common than sale of OTC drugs [21].

Problems associated with consumption of self-prevalled products include, lack of knowledge on the effects of medicine, occurrence of harmful side effects, interaction with prescription or other OTC drugs, food and alcohol and concurrent diseases and patient's condition. This imply the fact that even OTC drugs do require the advice of healthcare provider [22].

The use of prescription only medications without the knowledge of physicians can be less beneficial or even be dangerous for the patient [19].

Antimicrobials are among the most important drugs when used correctly. When they are over used or inappropriate used, however, they contribute troublesome, increasing worsen some problem in patient care i.e. the development of antimicrobial resistant pathogens [17].

Self-medication has a number of potential risks, thus in selecting the type of medicinal products that can be used for self-medication. The aim should be exploit the benefits and to minimize the risks [21].

Though self-medication is difficult to eliminate, intervention can be made to discourage this practice. If action is not taken, the danger of drug interactions and side effects could increase [23].

Significance of the Study

Because of lack of proper health education to the population, the practice of self-medication 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 self-medication as one main factor and Poor drug storage is one of the reasons that can decrease the effectiveness of the drug. Therefore the investigator believed that the study motivate intervention by the authorities in this critical area and it may also serves as a baseline data for further study.

Literature Review

Unlike the developed countries, illegal providers of drugs are common in developing countries, which is a further source of irrational and potentially dangerous drug use [23].

Improvements in people's general knowledge, level of education and socio-economic status in many countries form a reasonable basis for successful self-medication [21].

Research on self-medication practice in Addis Ababa January- February shows that:- The most frequently requested category of drugs were analgesics/ antipyretics (32.1%) antimicrobials (26.4%) GI drugs (17.7%) respiratory drugs (9.7%) and ORS (0.6%).

Source of information for self-medication 39% of drug consumers reported that they obtained advice from Health care providers (physicians; nurses; health assistants) but witch out formal prescription.

However 23.5% of them said they were advised by friends, relative, those do not have back ground in the health profession. Third (15.4%) source 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 drugs from labels, leaflet or promotional materials [24].

There researches that are done in different university such as:-

A descriptive study of self-medication reactive among Palestinian medical and non-medical university students shows that 98% of the surveyed students (n=1581) self-medicated.

Three towns of North West Ethiopia where people used S/M mainly because of its relative less cost (19,23) and in Jordan because of the ailments were believed too minor to see a doctor (46.4%) (10), in this study the most common reason reported was previous experience with the illness and/or actions to be taken (57.04%). This finding is in agreement with a study done in china where people used S/M mainly because they felt that they know what to do (9) and also 18.2% of participants of a study conducted in Addis Ababa was did so [24].

Approximately two third of the respondents reported a high self-care orientation and one third reported "good" medication knowledge [25].

Research done on self-medication among university students of Islamabad, Pakistan. Shows that from the total 200 students (females: 41 males 159) self-medication among female students was 41.5% and

males was 42.1% with an overall average of 42%. The prevalence of self-medication among engineering students was 43% where as it was 41% in the student of management science.

The most common source of drug information was advertisement (35.7%). Previous history of the use of the same medication (23.8%) and advice by sales man (other than qualified pharmacist) at drug store (23.8%) were the other main sources [26].

Another study conducted in Khartoum state, Sudan, on self-medication showed that from 1,200 individuals included in the study 81.8% of respondents used medicines including herbs without a medical consultation with in two months prior to the study period. Proprietary medicines alone were used by 28.3%, herbs alone by 20.7%, while 32.8% had used both [27].

In the study self-medication with proprietary medicines was least common with the middle aged, the elderly and low level of education. It was most associated with low and middle income, but no gender difference was found. Self-medication behavior with herbs was most associated with middle-age, female gender and lowest income earners [12].

There is also Research on self-medication amongst university students of karashi also shows that the prevalence of self-medication was found to be 76% (n=435). The most common factors that led to it were previous experience with similar symptoms. (50.1% n=218) and self-perception of trivial nature of the problem (48.3% n=210) the most common symptoms that leads students to self-medication were headache (72.4%) fever 55.2% and flu like symptoms (65.5%) and hence pain killers (88.3%), fever relieving medication. (65.15) anti allergic (44.1%) and antibiotics (35.2%) were among the most commonly used drugs [5].

2. OBJECTIVE STUDY

General objective

- To assess self-medication practice and drug storage on private pharmacy clients in Jimma town.

Specific Objective

- To determine the prevalence of self-medication
- To identify the reason for self-medication,
- To identify the source of information for self-medication
- To identify commonly treated illness by self-medication.
- To determine hoarding of modern drugs.
- To assesses the perception of selected private pharmacy clients on Jimma town on drug storage
- To identify where the drug is stored

Finally to forward recommendation based on the result obtained.

3. METHODOLOGY

The Study Area and Study Period

The study was conducted from June 28/2013_July 14/2013GC, in Jimma town, Jimma zone, Oromia region ,south west of 346KM from Addis Ababa. Jimma town was established in 1930s'GC and have the total population of 207,573 and twenty one pharmacies are their in the **town.(source Jimma town health bureau).**

Study Design

Across-sectional descriptive study would carried out using semi structured questioner consisting of general socio-demographic, socio- economic, perceived illness and action taken to overcome the illness and perception on drug storage and where the drug stored among clients of private pharmacies clients in Jimma in the past one year.

Population

Source Population

The source population had all the clients of private drug outlets in Jimma town that are presented in the study period.

Study Population

All private pharmacy clients who had participated during study period.

Sample Population

The sample population had all the clients of the pharmacies who had bought the drug for self-medication excluding those mental ill and under 18 years old age lives in Jimma town during study period.

Sample Size and Sampling Technique

Sample size had all the clients of the private pharmacies who bought drugs without prescription excluding those mental ill and under 18 years old age lived in Jimma town during study period.

Those private pharmacy where selected using simple random technique in all four direction including the center of town. The minimum sample size will be determined from the total population of Jimma town by the following formula:-

$$n = Z^{2(p)(q)} / d^2 \quad \text{Where: } n = \text{Sample size}$$

N= Total no of Jimma town population

Z= The standard normal value at (1- α) confident interval.

Z= 1.96 at 96% confidence interval.

P= proportion(0.5)

q= 0.5

D= Tolerable error = 0.05

n= is the minimum sample size possible and 5% contingency was added, so sample size is 405. Therefore sample size of 405 had considered and selected using random sampling technique those visited at pharmacy.

Study Variables

Dependent Variable

Action taken by individual with perceived illness

Reason for self-medication

Outcome of self-medication

Type of self-medication

Source of information for using self-medication

Place of drug storage

Knowledge on drug storage

Independent Variables

Age

Sex

Marital status

Religion

Ethnicity

Income

Data Collection Instrument

Semi structured questionnaire had been used to collect the necessary information. The variables to be collected include socio-demographic and socio-economic characteristics as well as type of action taken and related data of the study area. The data had been filled by investigator and trained data collector.

Data Processing and Analysis

The collected data checked for completeness of information and consistency. The data had been compiled, analyzed and presented using tables, calculator as well as graphs and charts.

Ethical Consideration

An official letter had been written from Jimma university community based education office to different kebeles in Jimma town to formalize data collection. Verbal consent from the respondent had obtained. The Respondents would be convinced on confidentiality of the information that they will give.

Quality Assurance

Before invited to the questions the Information had been given to them about how they understand the purpose and aim of the study. They were also informed about the objective of the study. So that every respondent would understand the question well and respond with attention.

Limitation of study

- Shortage of time and money
- Unwillingness obtained from some respondents may occur.
- Because of the smallness of the sample size, the result of the study may not be the exact reflection of the real situation.

4. RESULT

From the 405 sampled clients, 398 clients aged above 18 and agreed to be interviewed using semi-structured questionnaire during the study period. Majority of the respondents 204 (51.3%) were males and about 194(48.7%) Females. Two hundred twenty six (56.8%) were married. Around half 162(40.7%) of private clients were they attend the tertiary level while the least 30(7.5%) had illiterate and their age is greater than 45 years.

Table 5.1. Socio-demographic characteristics of private pharmacy clients in jimma town.july2013

Socio-demographic characteristics		Frequency	Percentage
Sex*	Male	204	51.3
	Female	194	48.7
	Total	398	100
Age*	18-24	70	17.6
	25-34	154	38.7
	35-44	106	26.6
	>45	68	17.1
Marital status	Married	226	56.8
	Un Married	126	31.7
	Widow	32	8
	Divorce	14	3.5
	Total	398	100
Religion	Orthodox	181	45.47
	Muslim	99	24.87
	Protestant	80	20.10
	Catholic	38	9.55
	Total	398	100
Educational status	Illiterate	30	7.5
	Read and write only	36	9.0
	Primary school(1-8)	34	8.5
	Secondary(9-12)	136	34.2
	Secondary (9-12)	136	34.2
	12+	162	40.7
	Total	398	100
Employment	Employment	182	45.73
	Farmer	8	2.01
	Merchant	78	19.6

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Occupation status	Trader	32	8.0
	Other	98	24.6
	Total	398	100
Income	< 100	12	3.0
	101-200	16	4.0
	201-500	81	20.4
	>500	289	72.6
	Total	398	100

Occupational status of around 182(45.73%) of respondents were employment of government and only 8(2.01%) were the farmer. 72.6% (289) of respondent were had monthly income is greater than 500 birr while 3% (12) had monthly income is less than 100 birr .

From the 398 studied respondents 312 individuals were reported to have illness in the past one year. More male 53.85(168) reported illness than females, and the majority of individuals with perceived illness 59.07 %(142) were aged under 35 while the fewer individuals 5%(12) were elderly, aged above 45.

Among the 312 people with perceived illness individuals practiced self-medication (S/M) had 77.56%.

Table 5.2. Action Taken by private pharmacy clients having Individuals with Perceived Illness by Income and Occupation Jimma town. July, 2013.

	Socio demographical characteristics	Action taken					Total
		M/M	T/M	H/F	N/A	MM/ TM	
Occupational status	Employment	122	7	22	-	3	154
	Farmer	8	1	10	1	-	20
	Merchant	30	4	18	-	2	54
	Trader	12	4	8	-	-	24
	Others	40	5	12	-	2	59
	Total	212	22	70	1	7	312
Income	>100	4	2	-	-	-	6
	101-200	8	2	2	-	1	13
	201-500	34	3	14	-	2	53
	>500	160	15	60	-	4	239

Keys

- M/M Modern medicine H/F – Health facility
- T/M – Traditional medicine N/A –No action taken

Majority 31.75 % of the self-medicated individuals used due to low cost while the least 4.76 % used because of dissatisfaction by health care provider (see fig. 5.1)

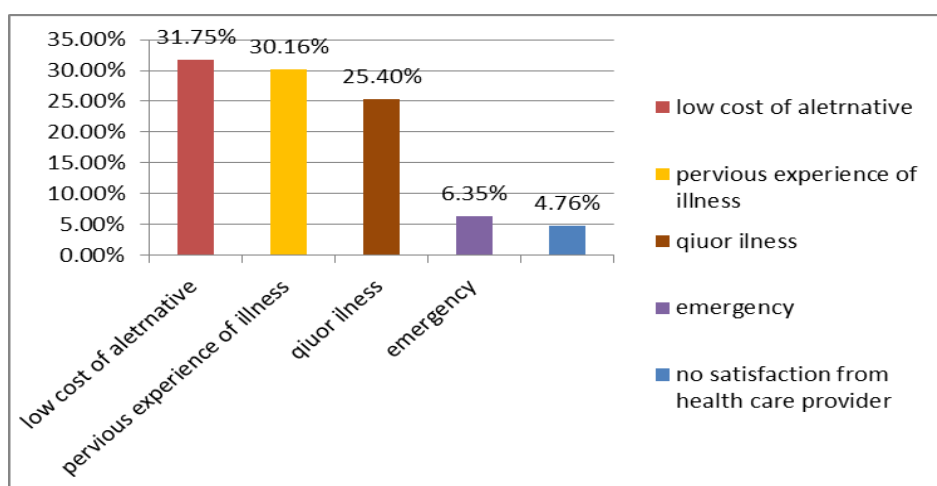


Fig 5.1. Distribution of reasons for S/M. (n=242) Jimma town, july,2013

About (48.02%) of self-medicated individuals source of information for choosing S/M was reported from personal drug outlets actions to be taken.

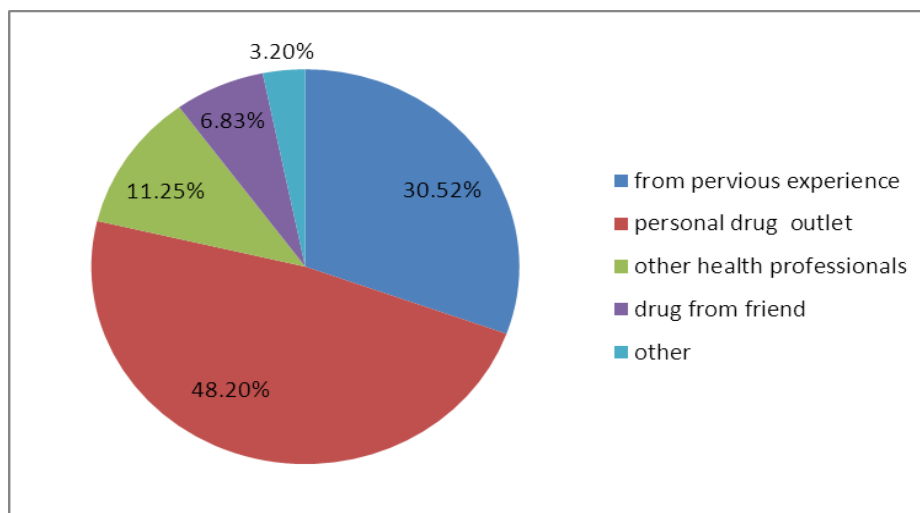


Fig. 5.2. Distribution of sources of information /advice for choosing S/M(n=242) Jimma town, july,2013.

The study also revealed that the major categories of medications used for S/M were analgesic/antipyretic 28.94% (68) antimicrobial 28.13%(66) and antihelmenties 17.56%.

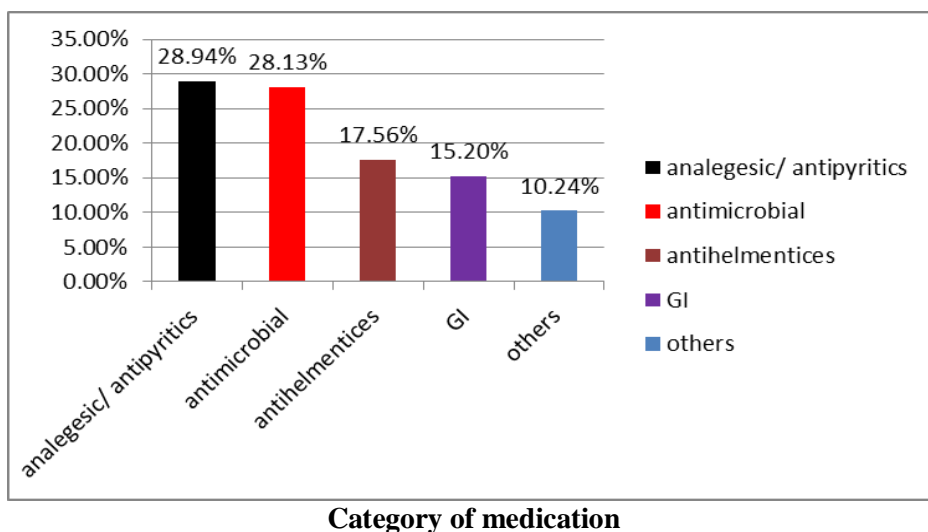


Fig 5.3. Distribution of category of medication used for S/M(n=242) jimma town. July,2013.

From the 242 self medicated individuals, the majority 75.20 % (182) individuals' health condition had improved while 8.26%(20) individuals' worsen. (see fig. 5.4)

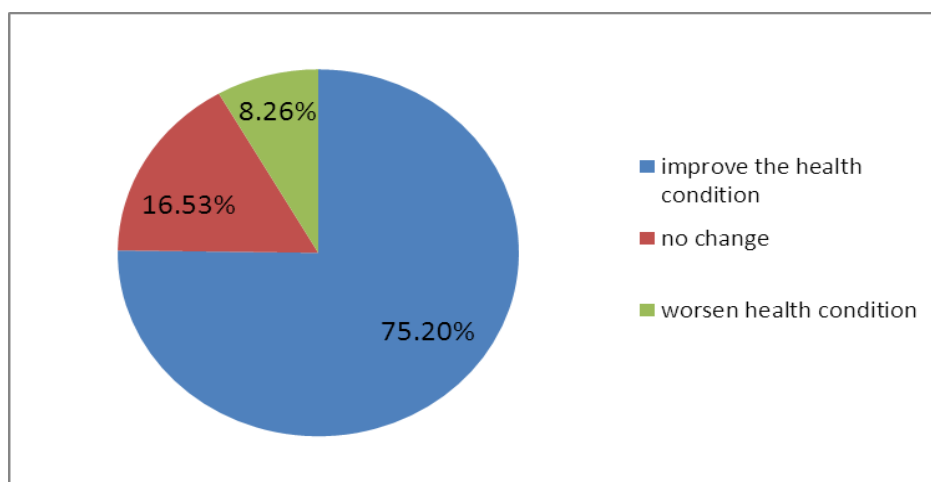


Fig 5.4. Distribution of the outcome of S/M (n=242) jimma town.July,2013.

The majority 64.46%(156) of self-medicated individuals have planned to look modern health care while others plans to continuous the S/M.

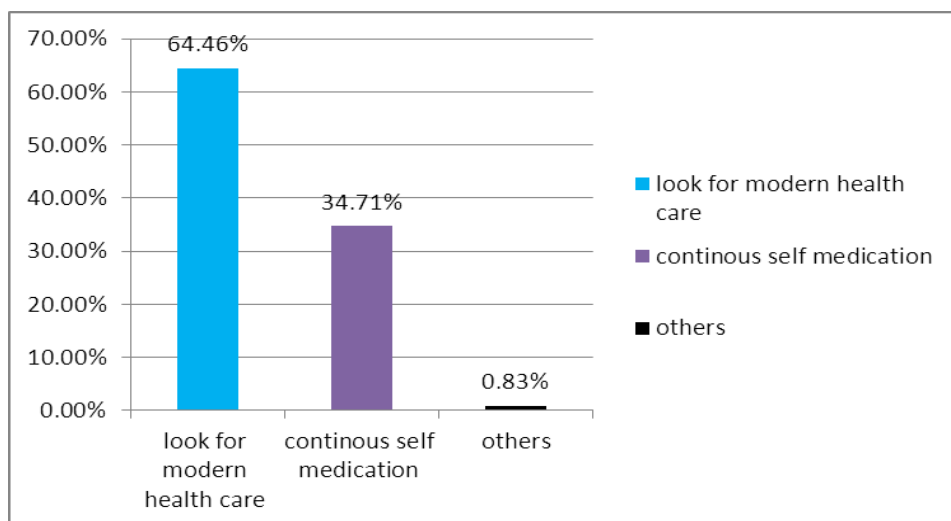


Fig. 5.5. Distribution of self-medicated individuals' future plan about S/M(n=242) jimma town. july,2013.

From the 302 sampled clients it was reported that 57.62 % (174) clients hoard modern drugs (see fig 5.6)

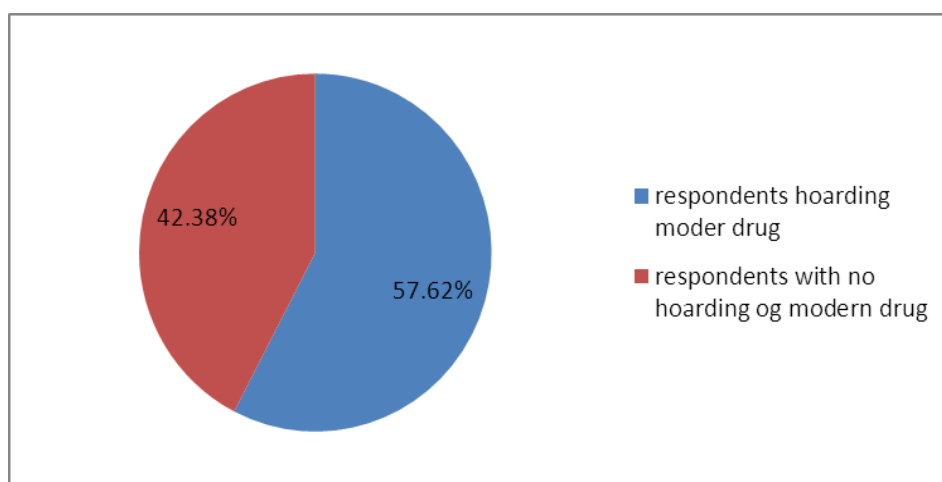


Fig. 5.6. Distribution of clients hoarding modern drugs (n=174) Jimma town. July, 2013.

Study also revealed that the commonest reason for hoarding modern drugs was to treat similar illness/symptom 48.87% while the least common one was to use that left over 11 % (see fig. 5.7).

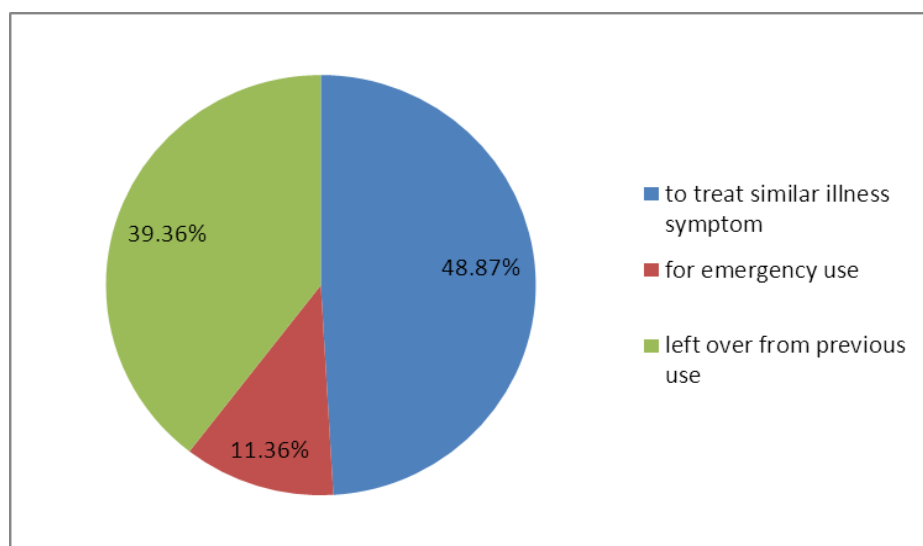


Fig. 5.7. Distribution of reasons for hoarding modern drugs (n=174) jimma town, July, 2013.

The most commonly hoarded drugs were analgesics /antipyretics (43.96%) followed by anti-helminthes 23.10% and antimicrobials and GI drugs(12.10%,12.10%). (see fig. 5.8).

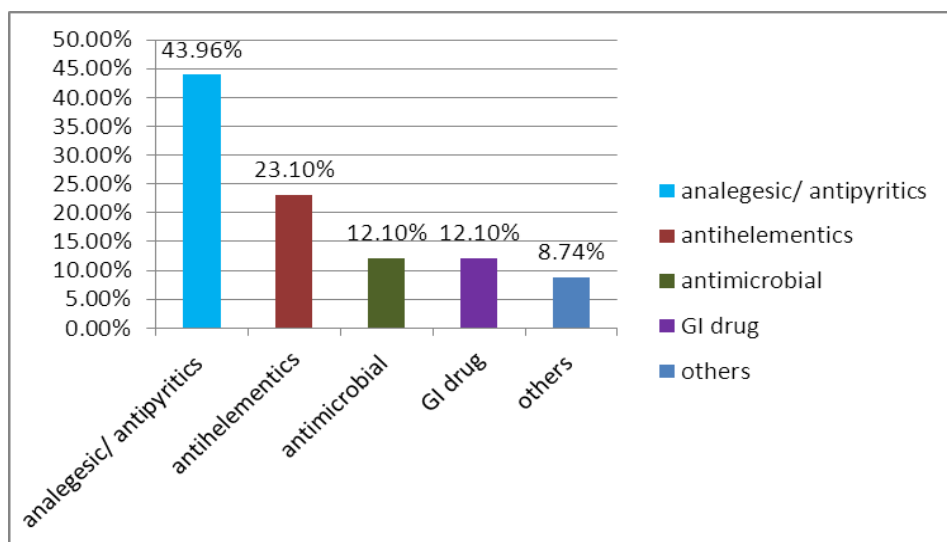


Fig. 5.8. Distribution of category of modern drugs hoarded (n=174) Jimma town. July, 2013.

Most of the private pharmacies clients stored the drugs in locked cabinets (44.00%) while least of them store in ordinary place (9.00%).

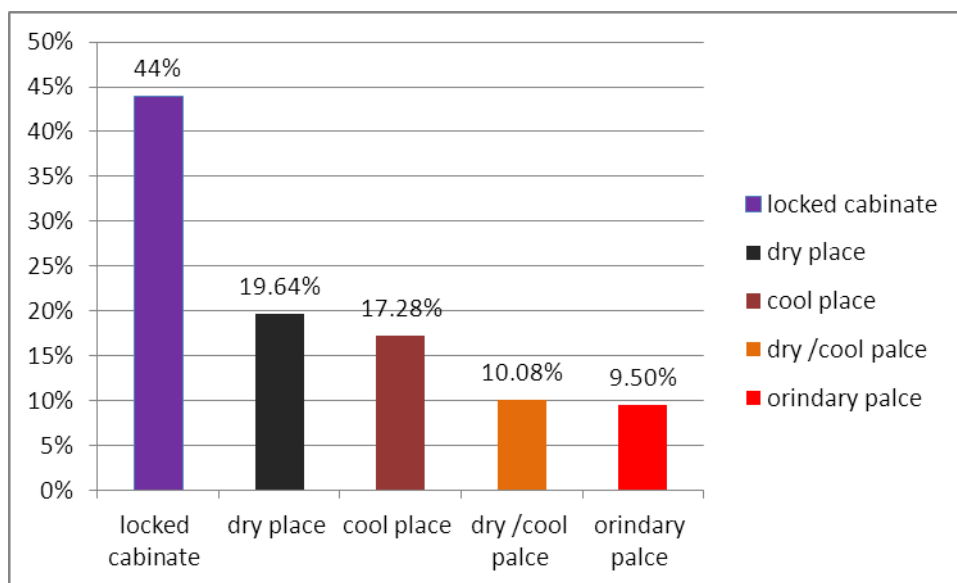


Fig5.9 Distribution of where the drugs is stored (n=174) Jimma town, July, 2013.

5. DISCUSSION

In this study the prevalence of S/M was reported to be 77.57% (242) from those who had health problem in the past one year, which is almost similar with the studies conducted in Sudan and university students of karashi that shows that the prevalence of self-medication indicated the prevalence 81.8%,76% [27,5]. The difference from the figures in this study could probably be because of the difference in the methodology (recall period).

The study also reported that males practice more S/M 53.3%(129) than females 46.7%(113) did, and this finding is in agreement with the studies done medication among university students of Islamabad, Pakistan in males as the fundamental element in the consumption of drugs and employment of S/M [26].

The commonest illness/symptoms that lead to S/M in this study category of drugs were analgesics/ antipyretics (28.94%) antimicrobials (28.13%) antihelminthics (17.56%), GI drugs (15.2%) this have almost similar figure with Research done on self-medication practice in Addis Ababa January-February [24].

In this study the most common reason reported was low cost and previous experience with the illness and actions to be taken (31.17%,30.17%)respectively. This finding is in agree with studies done in three towns of North West Ethiopia where people used S/M mainly because of its relative less cost [9,24].

From the clients of private pharmacy having monthly income are greater than 500 birr the majority (66.94%) have used.

From the MM used for S/M in this study 48.2% were obtained from DROs, which is almost similar with the findings of the study done in Jimma town previously (52.4%) [23]. self-medicated individuals in this study were recommended for S/M by personal drug outlets and from previous experiences.

With regard to drug hoarding 57.62 %(174) of the 398 clients of privet pharmacy hoard modern drugs at their home which had some similarity of a study done in three towns of North West Ethiopia (40%) [19] the variation is due to methodology (interviewed at health facility), The increased drug hoarding in the study area compared to the result from Addis Ababa could, probably be because of the peoples' experience (behavior) of hoarding antimalarial drugs for the fore coming episode of malaria and lack of knowledge on appropriate use of drugs.

The main reasons reported for hoarding modern drugs in this study were to treat similar illness/symptoms 48.87% and for emergency use (39.77). In another study done in Addis Ababa 50.4% of participants of the study discontinue drugs when they believe the illness /symptom is relived [17].

In this study the most common drugs reported in the clients who hoarding modern drugs were analgesic/antipyretic 43.96%(80),anti helmenthies 23.1%(42)and antimicrobials 12.01%(22),and GI drugs12.01%(22) that have some similarity study done in Jimma zone analgesic/antipyretic and antimicrobials were 30.5 %(33) and 27.8 %(30) respectively. The observed difference between the findings could be because of the difference in the major illnesses /symptoms of the areas studied [23].

Drug consumers who want to save drugs for future use and share drugs pose special attention particularly in case of antimicrobials. Therefore, people hoarding antimicrobials have to be made aware of the fact that these drugs should be taken in full dose and may expire in due course; in addition, the illness/symptoms they might face could be different from the previous ones, though symptoms may appear similar [17].

6. CONCLUSION

A significant number of private pharmacy clients (77.56%) use S/M from those perceived illness. Majority of the self-medicated individuals used due to low cost and males practice more S/M than females. The most common category of drugs used were analgesics/ antipyretics and antimicrobials. And the reason reported for using was low cost and previous experience with the illness .Clients obtained drugs easily from Drug Retail Outlets (DROs).

So, DRO are places to be the major sources of drugs that are used for S/M. The increased hoarding of drugs to treat similar illness/symptom and drugs left over from previous use contribute to the increase in the S/M practice. Common drugs reported in the clients who hoarding modern drugs were analgesic/antipyretic. Most of the clients were stored the drug in locked cabinets.

7. RECOMMENDATION

Much has 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, the proper use of antimicrobials.

During dispensing of drugs emphasis should be given to all drug consumers and dispenser because of resistance 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.

The Federal Ministry of Health (MOH) and the regional health bureau may need to facilitate ways so as to increase health service delivery institutions and quality of service delivered as well, so that more people can have access for utilizing health facilities. Finally, further study needs to be done in the study area to understand especially self-treatment practice.

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