



International Journal of Pharmacy & Therapeutics

Journal homepage: www.ijptjournal.com

IJPT

HOUSEHOLD SURVEY TO EVALUATE THE PRACTICES OF SELF MEDICATION IN KALANAUR TOWN OF HARYANA, INDIA

Seema Chhokar, Meena Sharma, Neeraj Gilhotra*

Pharmacology Laboratory, Department of Pharmaceutical Sciences, Maharshi Dayanand University,
Rohtak – 124 001, Haryana, India.

ABSTRACT

The aim of the study was households' survey to evaluate the practices of self-medication in Kalanaur town of Haryana, India. A cross-sectional, pre and post-study was conducted using a set of household interview questionnaire. This study included 500 household in Kalanaur town, Haryana, India. 38.4% were male and 61.6% were female. The proportion of respondents having age 15-30 years 59.8%, 30-40 years 22.6%, 40-50 years 8.4%, 50-60 years 6%, and > 60 years 3.2% participated in this study. 64.6% were married and 35.4% were unmarried respondents. They lives in urban areas which may reflects high percentage of respondents had primary to high education level 49.8%, 42% had high to graduation level and 8.2% had post graduate. Majority of the families had a source of livelihood; regarding occupation earning being labour 42%, private sector 39% and 15.2 % families have government job as an income source and 4.2 % had work in fields. Families know all drugs have some side effects (pre-intervention 64.4%, post-intervention 83.4%), discontinue their treatment when they felt better and the symptoms disappeared (pre-intervention 59.2%, post-intervention 44.8%), preferred colour or taste of drugs (pre-intervention 40%, post-intervention 39.8%), preferred swallowed drugs (pre-intervention 57.4%, post-intervention 64.8%), preferred injection (pre-intervention 21.8%, post-intervention 15.8%) and preferred liquid dosage form (pre-intervention 19.2%, post-intervention 19.4%), practiced self medication (pre-intervention 70.2%, post-intervention 40.8%), chose medicines based on self experience(pre-intervention 36.2%, post-intervention 18.8%), consulting to doctor (pre-intervention 50.4%, post-intervention 61.2%), consulting to pharmacists (pre-intervention 15.4%, post-intervention 20%) and consulting from general shop or neighbours (pre-intervention 2.8%, post-intervention- no one), change the medicines due to suggestions of others (pre-intervention 11.4%, post-intervention 2.2%), household's remedies for common ailments (pre-intervention 59.2%, post-intervention 54%). There is a widespread lack of knowledge about the use of medicines.

Key Words:- Households, Pre and post study, Intervention, Self-medication.

INTRODUCTION

Self-medication

In 1997 World Health Organization (WHO) Experts Committee on National Drug policies stated: Self medication is widely practiced in both developed and developing countries as time-saving and economical,

doing away with the need to go to a doctor for minor illness and providing quick, easy and convenient relief. World Health Organization (WHO, 1998) and the International Pharmaceutical Federation (FIP, 1999) defined self-medication as a practice by which an individual selects and uses medicines to treat symptoms or minor health problems, recognized as such by themselves. When done correctly, self-medication can benefit the individual's health and is recognized by the WHO as part of self-care (WHO, 1998; WSMI, 2006a). In developing

Corresponding Author

Neeraj Gilhotra

Email:- neerajmdu@rediffmail.com

countries, both modern drugs and traditional medicines are commonly used for self-medication (Bond CM and Bradley C, 1996; Abulal T and Worku A, 2001; WHO/FIP, 2006; Baruzaiq A and Bashrahil K, 2008; Kayalvizhi S and Senapathi R, 2010; Mohan L *et al* 2010; Abay S and Amelo W 2010; Bajait C *et al.*, 2011). Self medication is use of non-prescription medicines by people on the basis of their own initiatives (Husain A & Khanum A, 2008). Self medication mainly involves the use of no-prescription or over the counter (OTC) drugs (Dean K, 1986). However, the practice of self-medication include not only the use of OTC drugs, but also use traditional remedies and herbal medicines, non-compliance in the use of medically prescribed drugs, use of prescription medication without a prescription or use of medications that remain stored from previous use. The practice of using without professional prescription or suggestion, prescription medicines as no-prescribed is characterized as irresponsible self-medication (Aljinovic-Vucic V *et al.*, 2005). In one consumer survey, more than 92% of respondents had used at least one OTC drug during the past year and 55% of them had used more than one (Wertheimer AI, Serradell J, 2008). In several studies it has been found that inappropriate self-medication results in wastage of resources, increases resistance of pathogens and generally entails serious health hazards such as adverse drug reactions, prolonged suffering and drug dependence. (Hughes CM *et al.*, 2001; Kiyngi KS & Lauwo JAK, 1993; Clavinjo HA, 1995)

There is correlation between increased self-medication activity and demographic factors such as morbidity, income, education, gender, age and absence of periodic consultation. These have been found to be significant statistical factors in self-medication. Self medication may also be facilitated by certain situations including: Poor access to desirable health care because of lack of time, long distance, lack of accessibility to health care, 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, Poor regulation on prescription medicines and pharmacy practices Advertisements of medicines, that make claims of efficacy and scope of use but conceal adverse effects, Poorly informed consumers on matters of health and self-care, High burden of diseases, many of them with overlapping symptoms, Minor ailments like cold, cough, fever and diarrhoea.

Several studies of pharmaceutical practice have been conducted over the last two decades by pharmacoepidemiologists, health social scientists (Ali SE *et al.*, 2010). In India (1995), it was shown that literate

people were 76% more likely to self-medicate than illiterate people. Other studies (Singapore 1980; Brazil 1997; China 2004; Nepal 2002) confirmed that self-medication increases with education level and more generally that self-care improves with greater healthcare awareness. People keep stocks of leftover medicines and re-use them. They are over-prescribed and overused in self medication for the treatment of minor disorder such as simple cough, cold and fever. Some cannot afford the full course prescribed, or because they are not aware of need to complete course of medication.

It is now accepted that self-care in the form of responsible self-medication can be beneficial for patients, healthcare providers, the pharmaceutical industry and governments. Studies on factors influencing the pattern of self medication practice should be of interest to public health practitioners due to its possible deleterious effects especially in societies with high levels of illiteracy. Therefore, this research was carried out to provide practical insights into the issue of self medication in an urban slum community, which represents a socioeconomically and educationally deprived population.

MATERIAL AND METHODS

Kalanaur is a significant town of Rohtak District in State of Haryana situated on Delhi- Rohtak- Bhiwani road. This was a pre and post Interventional study. The data collection method was a structured interview of families or household.

Sampling

The baseline data collection research study was documented at 500 families interviewed, including the respondent of either gender and permanent resident of the town who were willing to participate. The study design was a baseline cross sectional study based on the method enclosed in World Health Organization (WHO) manual-How to investigate the use of medicine by consumers. A written questionnaire in Hindi was designed, field, tested, revised and finalized. The pilot study tested the questionnaire for reliability, comprehension, question design and length. According to the result of pilot study the draft protocol was revised and the weaknesses were addressed before the actual study was conducted. The data collected in the pilot study did not form a part of study sample. The questionnaire, composed entirely of closed question, covered the following aspects:-

- a) Socio-Demographic characteristics of interviewed households including- gender, marriage status, age, education, income.
- b) Interviewed concordance with treatment and perception including- complying with prescriber or

dispenser, advice etc.

c) Self medication including- practice towards medicine use.

d) Data collection

For collecting data Kalanaur town was selected. One member from each family was interviewed, generally the parents or other member of the family aged around 15 to 60 years old. A total of 500 households were involved in the study. Interviewer introduced themselves to the household respondent and informed them, all the information will be kept confidential. When respondents give their agreement to participate in this study, Interviewer gave them the questionnaire. The answer of the interview and the observation were recorded instantly into the questionnaire form by interviewer. All respondents were assured of anonymity and informed that only aggregate data would be reported that they were free to refuse to participate at any time.

Handouts and Interactive Lecture Session

The intervention used printed handouts information and an interactive lecture session where in face-to-face communication with the households or respondent could be achieved. This session aimed with respondents that they must know information about the practice of medicines.

Press Release

As part of advocacy, liaison was established with local press who were given articles for publication, about rational use of medicines in general and how that affects the people. After completing the triads of intervention a post intervention interview was undertaken using the same instrument and find out the impact of intervention.

Data Processing and Analysis

Information obtained was checked and verified. Pair-wise comparison of pre and post-intervention groups has been performed by using a normal test. The Chi-Square test for independence of attributes has been applied. The cut off for statistical significance was set at 5% level. Result was presented in tabular form.

Ethical Approval

Ethical approval of the study was approved by the Municipal Committee, Kalanaur town and Department of Pharmaceutical Sciences Maharshi Dayanand University Rohtak, Haryana, India under the guidance of Dr. Neeraj Gilhotra Associate Professor of Pharmacology at MDU Rohtak. A consent form was signed by the respondents and all the collected data have been used only for the purpose of this study.

RESULTS

A total of 500 families' respondents or households participate in this study, of which 38.4% are male and 61.6% are female. The proportion of respondents having age 15-30 years 59.8%, 30-40 years 22.6%, 40-50 years 8.4%, 50-60 years 6%, and > 60 years 3.2% participate in this study. 64.6% are married and 35.4% are unmarried respondents. They lives in urban areas which may reflects high percentage of respondents having primary to high education level 49.8%, 42% have high to graduation level and 8.2% have post graduate. The majority of the families have a source of livelihood; regarding occupation majority are earning being labour 42% and private sector 39% and 15.2 % families have government job as an income source and 4.2 % has work in fields or farmer. In pre-intervention 64.4% families know all drugs have some side effects and in post-intervention ration become 83.4%, In pre-intervention 59.2% discontinue their treatment when they feel better and the symptoms disappear and in post-intervention 44.8%, In pre-intervention 40% prefer colour or taste of drugs and in post-intervention 39.8%, In pre-intervention 57.4% prefer swallowed drugs in post-intervention 64.8%, In pre-intervention 21.8% prefer injection and in post-intervention 15.8%, In pre-intervention 19.2% preferred liquid dosage form and post-intervention 19.4%, In pre-intervention 70.2% practice self medication and in post-intervention 40.8%, In pre-intervention 36.2% choose medicines based on self experience and in post-intervention 18.8%, In pre-intervention 50.4% consulting to doctor and in post-intervention 61.2%, In pre-intervention 15.4% consulting to pharmacists and in post-intervention 20%, In pre-intervention 2.8% consulting from general shop or neighbours and in post-intervention- no one, In pre-intervention 11.4% change the medicines due to suggestions of others and in post-intervention 2.2%, In pre-intervention 59.2% of survey household's use remedies for common ailments and in post-intervention 54%. The following findings are statistically significant. Results are given in Table No. 1, Table No. 2 and Table No 3.

DISCUSSION

It has been suggested that IEC (Intervention education communication) implemented, brings about a positive change in attitude and knowledge of consumers. The Families interviewed are very difficult to conduct in a single town of a city. This is highly time consuming research study. Family's respondents were afraid about it and thought what they do after data collection.

Table 1. Socio-Demographic characteristics of interviewed households include gender, Age, marriage status, occupation, income, education

Characteristics	Parameter	Households	Percentage
City	Kalanaur	(n=500)	100%
Location	Urban	500	100
Gender	Male	193	38.4
	Female	307	61.6
Age	15-30	299	59.8
	30-40	113	22.6
	40-50	42	8.4
	50-60	30	6
	>60	16	3.2
Marriage status	Married	323	64.6
	Unmarried	177	35.4
Occupation	Government	76	15.2
	Agriculture	21	4.2
	Private	195	39
	Labour	210	42
	Unemployed	0	0
Income	1000-5000	226	45.2
	5000-1000	115	23
	>10000	159	31.8
Education level	5 th to 10 th	249	49.8
	10 th to Graduate	210	42
	Graduate	41	8.2

Table 2. Interviewed households concordance with treatment and perception

Interviewed Households (all figures in percentages)	Intervention			
	Pre (n=500)	Post (n=500)	P value	
Families know all the drugs have some side effects	64.4	83.4	6.57436E-08	
Stop taking the prescribed medicine when fell better or symptoms disappear	59.6	40.4	0.011057139	
Color or taste of drug influence their acceptance	40	39.8	*	
Dosage form of drugs administration they prefer	Swallowed	57.4	64.8	0.727269
	Injection	21.8	15.8	0.178662
	Liquid dosage form	19.2	19.4	0.498841

Table 3. Self-medication

Interviewed Households (all figures in percentages)	Intervention			
	Pre (n=500)	Post (n=500)	P value	
Families practiced self-medication for common ailments	70.2	40.8	0.953279341	
Families Choose medication according to:-	Self-experience	36.2	18.8	1.90735E-06
	Doctor	50.4	61.2	0.000214
	Pharmacists	15.4	20	4.60664E-07
	Others	2.8	0	0.122331
Families change medicines do to others suggestions	11.4	2.2	1.14902E-05	
Families use households remedies for common ailments	59.2	54	0.953279341	

*The normal test for proportion has not been applied where the pre and post-cell counts are very small.

However, studies carried out in the community were very important as they enable researchers to understand medicine use practice and related aspects from both the patients as well as consumers point of view, and may encourage the development of adequate medicines policies (Gest Svan Der Ds Hardon A.1988).

The current study had planned on intervention based on families need assessed through first contact. This study evaluates the self medication of the families. Change in level of knowledge is concerned; it was achieved through face to face intervention with families. The overall result of this study regardless education level, age, occupations and monthly income were calculated.

Interviewed concordance with treatment and perception

Most of the families do not know that all medicines have some side effects. When people experiences side effect such nausea, vomiting or dizziness, it is usually thought to be worsening of the illness. In pre-study 64.4% know drugs have some side effects and in post-study 83.4% know about it. There for they should always ask about the side effects of medicines.

59.6% families reported in pre-study and in post study 40.4% mention that they stop to taking the prescribed medicines if they feel better or the symptoms disappear. Who have not understood the need to complete the course stop using medicines when the symptoms disappear, while others take an overdose as they think that this will lead to faster recovery? So they adhere and complete the course of treatment. The taste and colour of medicines is irrelevant to the action of medicines. So consumers should not refuse a medicine of different colour or taste. They should leave the health provider to choose the appropriate dosage form.

In pre-study 57.4% prefer swallowing dosage form for administration of drugs and in post-study 64.8% said that they prefer this form because tablets are cheaper than injection and easy to handle.

In many countries health workers and consumers believe that injections are more effective than tablets and preference of injection to oral medication and widespread misuse of injection in many developing countries. Therefore, in 1990 the WHO Action Programme on Essential Drugs instigated a collaborative study on injection practice in three developing countries (Indonesia, Senegal and Uganda) In this 40% of households in Indonesia had received one or more injections, 30% of households in Uganda had received one or more injections and in Senegal. In this study some of families did not know injections are the riskiest and costly dosage form. If self-medication with oral therapy brings no relief, or when

a fast cure is desired, patients tend to solicit providers for an injection. This preference for injections is guided by local ideas and beliefs of illness and concepts of efficacy. They thought injections cure quickly and they did not know injections not only leads to unnecessary expense, it also leads unnecessary health risk when injection are administered in unhygienic conditions. In pre-study 21.8% preferred injectable route of administration after intervention that only 15.8% families preferred injectable route of administration. To sustain this result, there is need for continuous health education to both prescribers and patients on the disadvantages of injection use such as they are inconvenient, more expensive, less safe, painful and require skilled personnel to administer.

In pre-study 19.2 reported that they preferred oral liquid dosage form and in post study 19.4 said that they preferred oral liquid dosage form because they have problem with swallowing and injectable dosage form and for children easy to take liquid dose form.

Self-medication

In pre-study 70.2% families said that they were self-medication for common ailment i.e. cold, cough, fever, headache, diarrhoea. After intervention in post study 40.8% said that they were self medication for common ailment. In economic terms, inappropriate use leads to the wastage of limited resources and non availability of medicines. Most of the respondents had positive attitude in self medication for minor illness. Major reasons of self medication at families were time saving, perception that there was no need to advice from the prescriber for minor illness, self medication found to be economical and fear about doctor fees. This study reported that families assessment of medicines they were consult by different health provider, traditional healers or self medicated through self experienced or consult by others and in pre-study there were 36.2 % said that they choose the medicines on the basis of previous experience after intervention changes in this habit and in post-study 18.8% families reported that self experienced medication. In pre-study 50.4 % families were consulting to doctor for their health problem and choose medicines according to doctor and after intervention in post-study 61.2% consult with doctor for their treatment and choose medicines according to doctor. Pharmacists are usually the final link between the medication and the patient (Kumud *et al.*, 1996). In pre study 15.4 % families were consulting according to Pharmacists if they experienced any health problem in and in post-study 20%. Pharmacist have significantly contributed to the existing several problems in the practice of pharmacy on general and patient counseling in particular (Zewdie *et al.*, 1999).A small

proportion of families (2.8%) said they were obtained or consult medicines from general shop or neighbours in post-study no one families were consult medicines from general shop or neighbours. 11.4% interviewed families admitted to sharing or exchanging medicines with others in and in post-study 2.2% share with others. The common reasons for choosing self medication by families is personal knowledge and small health problems and usually for common ailments and also beliefs on traditional remedy experience and no side effects. In pre-study 59.2% families reported that they use household's remedies for common ailment i.e. headache, cold, cough, fever, diarrhoea, skin problem. In post-study 54% families said they use household's remedies for common ailments. The choosing of household's remedies by families is personal knowledge and small health problems and also beliefs on traditional remedy experience and no side effects. The most common type of remedies used by families in pre-study 16.4% basil, 5.8% cardamom, 18% honey, 4.6% clove, 42.4% ginger, 3.4% turmeric and 2.8% using others remedies and in post study 17.6% basil, 6% cardamom, 19.4% honey, 5 clove, 49.4% ginger, 2.6% turmeric and 1.2% using others remedies for common ailments.

Most of the respondents (45.2%) have a monthly income of less than Rupees 5000. The association between low economic status with use of self medication is statistically significant. This means that understanding of consumers attitude to medicines in order to improve drug use and studies indicated that drug consumers decision are influenced by their income, social and cultural attitude, surrounding environment information, believes, promotion, symptoms and

perception of drugs. The commonest illnesses that led to self medication in this study (headache, fever, cold, cough and diarrhoea) were also reported similarly in other studies.

CONCLUSION

The results of this study suggest lack of knowledge and information about the proper use of medicines and inappropriate practices, attitude and beliefs have been revealed. This study highlights the urgent need of public education about specific risk/ side effects of self medication and its importance, by mass media and local government authorities. For this it is necessity of involvement of the regulatory authorities to provide continuous medicines education targeting community by organizing various intervention, seminars and workshops to discuss aspects of rational drug use. IEC activities should be strengthened to encourage public to avail health services from government facilities which is at a highly subsidized cost. Essential List of drugs which can be dispensed across the counter should be displayed and vigilance should be strengthened on medical stores to ensure that prescription drugs are not dispensed over the counter.

ACKNOWLEDGEMENT

I would firstly like to thank my loving and supportive family. In addition to Dr. Neeraj Gilhotra, Associate Professor of Pharmacology Department of Pharmaceutical Sciences, Maharshi Dayanand University, Rohtak (Haryana), India and the entire households who willingly participated in this research work and make this study successful.

REFERENCES

- Abay SM, Amelo W. Assessment of self-medication practices among medical, pharmacy, and health Science Students in Gondar University. Ethiopia. *Journal of Young Pharmacists*, 2(3), 2010, 306-310.
- Abdo-Rabbo A, Al-Ansari M, Gunn BC, Suleiman BJ. The use of medicine in Oman public knowledge, attitude and practices. *Clinical & basics research*, 9(2), 2009, 124-131.
- Abulal T, Worku A. Self-medication in three towns of North West Ethiopia. *Ethiop. J. Health Dev*, 1(15), 2001, 25-30.
- Ali SE, Ibrahim MIM, Palaian S Medication storage and self-medication behaviour amongst female students in Malaysia. *Pharmacy Practice*, 8(4), 2010, 226-232.
- Aljinovic-Vucic V, Trkulja V, Lackovic Z. Content of home pharmacies and self-medication practices in households of pharmacy and medical students in Zagreb, Croatia: findings in 2001 with a reference to 1977. *Croat Med J*, 46(1), 2005, 74-80.
- Bajailt CS, Jaiswal KM, Jaiswal SR, Pimpalkhute SA, Sontakke SD. Comparative study of evaluation of self-medication practices in first and third year medical students. *International Journal of Biological Medical Research*, 2(2), 2011, 561-564.
- Baruzaig AS, Bashrahil KA. Self-medication: concept, prevalence & risks in Mukalla City (Yemen). *Andalus for studies & Research*, 2, 2008, 1-3.
- Bond CM, Bradley C. Over the Counter Drugs: The interface between the community pharmacist and patients. *BMJ*, 312, 1996, 758-760.

- Clavinjo HA. Self-medication during pregnancy. *World Health Forums*, 16, 1995, 403–404.
- Dean K. *Lay care in illness. Social Science & Medicine*, 22(2), 1986, 275-284.
- Figueiras A, Caamano F, Gestal-Otero JJ. Sociodemographic factors related to self- medication in Spain. *European Journal of Epidemiology*, 16(1), 2000, 19-26.
- Galato D, Galafassi LM, Alano GM, Trauthman SC. Responsible self-medication: review of the process of pharmaceutical attendance. *Brazilian Journal of Pharmaceutical Science*, 45(4), 2009.
- Gest S Van Der, Hardon A. Drug use: methodological suggestion for field research in developing countries. *Health Policy and Planning's*, 3(2), 1988, 152-158.
- Gharpure K, Thawani V, Sontakke S, Chaudhari K, Bankar M, Diwe R. Effect of information, education and communication intervention on awareness about rational pharmacy practice in pharmacy students. *Indian Journal Pharmacology*. 43, 2011, 381-4.
- Gupta P, Bobhate PS, Shrivastava SR. Determinates of self medication practices in an urban slum community. *Asian journal of pharmaceutical and clinical research*, 4, 2004, 0974-2441
- Gutema GB, Gadisa DA, Kidanemariam ZA, Berhe DF, Berhe AH, Hadera MG, Hailu GS, Abrha NG, Yarlagadd R, Dagne AW. Self-Medication Practices among Health Sciences Students: The Case of Mekelle University. *Journal of Applied Pharmaceutical Science*, 01(10) 2011, 183-189.
- Hardon A, Hodgkin C, Fresle D. How to investigate the use of medicines by consumers. *WHO and University of Amsterdam*, 2004.
- Hughes CM, McElnay JC, Fleming GF. Benefits and risks of self medication, *Drug Saf*. 24, 2001, 1027–1037.
- Husain A, Khanum A. Self medication among university students of Islamabad, Pakistan- a preliminary study. *Southern Med Review*, 1(1), 2008, 14-16.
- Jogdand SS, Phalake DB, Nandal DH. Knowledge and pattern about medicine use amongst rural people of Maharashtra. *National Journal of Medical Research*, 3(4), 2013, 358-361.
- Kayalvizhi S, Senapathi R. Evaluation of the perception, attitude and practice of self-medication among business students in three selected cities, south India. *International Journal of Enterprise and Innovation Management Studies*, 1(3), 2010, 40-44.
- Kiyingi KS, Lauwo JAK. Drugs in home: danger and waste. *World Health Forum*, 14, 1993, 381–384.
- Kumud K, Farai C, Suryawadi S. Role of dispensers in promoting rational drug use. *Ensuring good dispensing practice*, 11(3), 1996, 1-21.
- Lau GS, Lee KK, Luk CT. Self-medication among university students in Hong Kong. *Asia Pacific Journal of Public Health*, 8(3), 1995, 153-157.
- Mohan L, Pandey M, Verma RK. Evaluation of self-medication among professional students in North India: proper statutory drug control must be implemented. *Asian Journal of Pharmaceutical and Clinical Research*, 3(1), 2010, 60-64.
- Papakosta M, Zavras D, Niakas D. Investigating factors of self-care orientation and selfmedication use in a Greek rural area. *International Electronic Journal of Rural and Remote Health*, 2014.
- Thawani VR, Gharpure KJ, Sontake DS. Impact of medicine-related information on medicine purchase and use by literate consumers. *Indian Journal of Pharmacology*, 46(4), 2014, 420-424.
- Wertheimer AI, Serradell J. A discussion paper on self-care and its implications for pharmacists. *Pharmacy World & Science*, 30(4), 2008, 309-315.
- World Health Organization. The role of the pharmacist in self-care and self-medication. Hangué: *World Health Organization*, 1998. 17p.
- World Self Medication Industry. WSMI declaration on self-care and self medication. Available at <http://www.wsmi.org/pdf/boarddeclarationsselfcare.pdf>, 2006a.
- Zewdie D, Jorge Y, Gebre Mariam T. A preliminary assessment of outpatient counseling in four referral Hospitals of Addis Ababa. *Ethiop Pharm J*, 17, 1999, 44-50.