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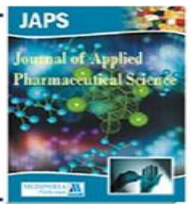

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Knowledge, attitude and practice of patient medication counseling among drug dispensers in North West Ethiopia

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ABSTRACT

Patient medication counseling on dispensing of medicines should give the patient clear and complete instructions on how to take or use drugs. The way drugs are taken by the patient is often influenced by the way drugs are dispensed and the type of information given during dispensing. The objective of this study was to assess drug dispensers' knowledge, attitude and practice of patient medication counseling in drug retail outlets of Gondar and Bahir Dar towns. A cross-sectional study was conducted on patient medication counseling by using a self-administered semi-structured questioner. The questionnaire was distributed to dispensers to fill in their home or at their free time and collected in the next day. Data were analyzed using SPSS for windows version 16.0. Forty (62.5%) of the dispensers believe that patient counseling is a shared responsibility of pharmacy professionals and physicians. Only 29.7% of the dispensers always update their knowledge on drugs and their most frequent source of drug information on drugs were leaflets. Forty nine (76.6%) of dispensers respond as they know the formal way and the information included in patient counseling. Lack of adequate knowledge on drugs and up-to-date drug information was major factor that prevent dispensers from counseling patients. Most of the dispensers are not accessible to up-to-date drug informations. The dispensers give less counseling. Lack of knowledge and update drug information was the major barrier of patient medication counseling dispensers faced. Formal education should include patient counseling and continuous training should be given to increase dispensers' knowledge on patient counseling. Up to date and relevant drug information sources should be given to dispensers.

Key words: Patient counseling, drug information, attitude, knowledge, practice, Ethiopia

INTRODUCTION

Pharmacists are usually the final link between the medication and the patient (Kumud et al, 1996) Patient counseling is a key component of pharmaceutical care process. Drug dispensers should provide appropriate, understandable and relevant information to patient about their medication (Beardsley, 1997, and WHO; promoting rational use of medicines, 2002). It should also include an assessment of weather or not the information was received as intended and that the patient understands how to use the information to improve the probability of the therapeutic outcomes (WHO; promoting rational use of medicines, 2002). The pharmacy professional should appropriately educate patient on the name and description of the medication, duration of therapy, special directions and precautions for preparing of drugs, common side effects, therapeutic indication and contra-indications, proper storage, refill information and appropriate actions to be taken in case of missed dose, when dispensing prescribed and non prescribed drugs, when patient counseling on discharge medication or when provided recommendation about management of

specific drug related problem((WHO; Promoting rational use of medicines, 2002, Michael and Jackson, 2003)

Counseling should be verbal and accompanied by written information for patient to refer to at home. Written material re-informs what the pharmacist say's and helps the patient to recall what was said (4). The counseling process properly implemented and consistently maintained will result in improvement in the patient understanding about the medication, improve adherence, and improve pharmacists prescribed relationship (Melanic, 2007). Dispensing is often overlooked by health planners during the development of health care delivery. It is usually considered of a secondary importance to diagnosis, procurement, inventory control and distribution. This oversight is unfortunate, since inappropriate dispensing can undo many of the benefits of the health care system (Kumud et al, 1996, and Johanna and Lawrence, 2004). Rational drug use requires that patient's receive medication appropriate to this medical needs, in doses that meet their own individual requirement, for an adequate period of time and at the lowest cost to them and their community. Worldwide more than 50% of all medicines are prescribed, dispensed or sold inappropriately. Inappropriate use of drugs waste resources often out of pocket payment by patient and result significant patient harm in terms of poor patient outcomes and adverse drug reactions (Drug Administration and control Authority of Ethiopia, 2004).

Although providing patients with adequate and clear information on drugs is one of the basic services expected to be rendered by the pharmacist, it seems that it has received little attention in Ethiopia. It is presumed that shortage of qualified personnel, lack of preparedness of the practicing pharmacist, and community perception towards practicing 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).

In order to improve patient health care and reduce the number of medication related errors, a greater emphasis must be placed on pharmacists' patient counseling, while pharmacists are working in situations where man power can not satisfy the demands of increased prescription volume; time still needs to be spent on counseling patient in order to give better patient care (Bruce, 2006). The purpose of this study is to determine the knowledge, attitude and extent of patient medication counseling offered by drug dispensers in pharmacies and drug retail outlets in North West Ethiopia. This study may provide information showing the scope of problem of patient medication counseling (PMC) in North West Ethiopia which may help local regulatory authorities to make plane and take interventions accordingly.

PARTICIPANTS AND METHODS

Study Area and Period

The study was conducted in North West Ethiopian town of Bahir Dar and Gondar which are located 565 and 738kms respectively from Addis Abba, capital of Ethiopia. The data was collected from January 16 to February 26, 2009.

Study Design

A Cross-sectional study was conducted by using self-administered semi-structured questioner. Contents of the questionnaire are sociodemographic details of the pharmacists Attitude Assessment, Assessment of knowledge and access to information and Patient Medication Counseling information All of dispensers that work in rural drug venders, drug shops, community pharmacies and health institution drug retail outlets in Gondar and Bahir Dar towns were included in the study.

Data Collection process

A semi-structured questionnaire prepared by the investigator was used to collect the information on patient medication counseling. Then the questionnaire was given to the dispersers to fill it in their home or at their free time and collected in the next day. For better quality of data the investigator of the study explained highlight of the questionnaire to the dispenser during delivery of the questionnaire. In the next day during collection of questionnaire the dispensers were asked if there were any unclear ideas in the questionnaire and was checked for any unfilled information.

Statistical Analysis

The validity of the questionnaires was assessed through in-depth discussion with senior pharmacist working in School of Pharmacy of Jimma University. The collected data was cleared, categorized, and coded. All data collected were then analyzed using the Statistical Package for the Social Sciences (SPSS), version 16.0 software. Tests of proportions were done with Chi-Square, and a p value of < 0.05 was considered as statistically significant.

Ethics

This study was approved by the Ethics Committee of Jimma University and then from Amhara Regional state Health Biro. Verbal consent was obtained from each participant during data collection. The confidentiality of the data obtained was assured and the name and address of the patient was omitted from the questioner.

RESULTS

Socio demographic Characteristics of the participants is shown in table 1. A total of 64 dispensers were included in this study, 35(54.7%) were from Gondar town and 29(45.3%) were from Bahir Dar town. Twelve (18.8%) were pharmacists, 43(67.2%) were druggists, 3(4.7%) were pharmacy technicians and 6(9.4%) were health assistants. Fifty one (78.12%) of the dispensers was males. Majority (87.5%) of the studied drug dispensers were privately working while others (12.5%) working in government health facilities.

Dispensers' attitude on Patient Medication Counseling

Most of dispensers (62.5%) have an attitude of both physicians(prescribers) and pharmacy professionals should counsel

Table1: Socio-demographic characteristics of drug dispensers in North West Ethiopia, Jan 2009.

Socio-demographic Characteristics		Frequency (%)				Total
		Pharmacist	Druggist	Phar.T.	H.A.	
Sex	Male	12(100)	32(72.1)	1(33.3)	6(100)	51(78.1)
	Female	-	11(27.9)	2(66.7)	-	13(4.9)
	Total	12(100)	43(100)	3(100)	6(100)	64(100)
Age group	≤30	1(8.3)	8(18.6)	2(66.7)	-	11(17.2)
	31-40	2(16.7)	14(32.5)	1(33.3)	1(16.7)	18(28.1)
	41-50	5(41.7)	12(27.9)	-	2(33,.3)	19(29.7)
	51-60	4(33.3)	6(14)	-	2(33.3)	12(18.8)
	>60	-	3(7)	-	1(16.7)	4(6.2)
	Total	12(100)	43(100)	3(100)	6(100)	64(5.2)
Presence of Assistant	Yes	9(75)	29(67.4)	-	1(16.7)	39(60.9)
	No	3(25)	14(32.6)	3(100)	5(83.3)	25(39.1)
	Total	12(100)	43(100)	3(100)	6(100)	64(100)
Working sector	Private	12(100)	38(88.4)	-	6(100)	56(87.5)
	governmental	-	5(11.6)	3(100)	-	8(12.5)
	Total	12(100)	43(100)	3(100)	6(100)	64(100)

Phar. T (Pharmacy technician), H.A (health assistant)

Table 2 Attitude of drug dispensers in North West Ethiopia towards the responsible body for counseling patients on their medication based on their educational qualification and age, Jan 2009.

Factors that affect attitude		Responsible body to counsel			P value
		Pharmacy (20)	Physician (4)	Both (40)	
Educational qualification	Pharmacist	8	1	3	0.026
	Druggist	11	2	30	
	Phar. T.	0	1	2	
	H.A.	1	0	5	
Age group	≤30	4	0	7	0.072
	31-40	4	1	13	
	41-50	5	1	13	
	51-60	6	0	6	
	>60	1	2	1	

patients about their medication. 31.25% and 6.25% of the dispensers have responded that patient counseling is pharmacy professionals and physicians responsibility respectively. Educational qualification was affecting response while age was not having statically significant effect (Table 2).

Frequency of knowledge updating and knowledge on Patient counseling

The frequencies of drug dispensers' drug information updating responses were always by 29.7% of dispensers and rarely by 9.3% of the dispensers. Their primarily sources of drug information for updating of their knowledge were by leaflets 46(71.9%) and books 40(62.5%) (Table 3). Forty nine (76.6%) of the dispensers responded that they know the formal way and the information that must be included during counseling. In terms of educational qualification 83.3% of pharmacists, 79.1% of druggists, 66.7% of pharmacy technicians and 50% of health assistants involved in dispensing responded that they know the formal way and the information that must be included during counseling of patients.

Table 3: Frequency of knowledge updating and sources of drug information of drug dispensers in North West Ethiopia, Jan 2009.

Characteristics	Percentage of respondents (n=64)
Source of Information	
Formularies and guidelines	17.2
Friends	7.8
Internet	6.2
Drug information bulletins	14.1
Books	62.5
Leaflets	71.9
Frequency of knowledge updating on drugs	
Always	39.7
Often	34.4
Sometimes	26.6
Rarely	9.3

Table 4: Patient counseling activities given by drug dispenser in North West Ethiopia, Jan 2009.

Patient counseling activity	Frequency (%)
Tell purpose of each counseling	9(14.1)
Ask patients what prescriber has told how they perceive	11(17.2)
Ask patients if they have problems in taking the drug(s) as prescribed	15(23.4)
Tell the time need for the drug to show effect	17(26.6)
Discus major side effects	12(18.8)
Discus life-style modifications	49(76.6)
Tell due back for refill when necessary	51(79.7)
Tell what to do if a patient misses a dose	5(7.8)
Open the container and show what the drug look like	33(51.6)
Check patient understanding by asking to repeat back key informations	46(71.8)
Total	64(100)

Table 5: Patient counseling activities distribution among different educational qualifications, age groups, knowledge of formal way of counseling and presence of assistant, Jan 2009.

Factor affecting patient counseling activity		Frequency (%)		Total	P value
		Yes	No		
Educational qualification	Pharmacist	53	67	120	0.06
	Druggist	171	259	430	
	Phar.T.	9	21	30	
	H.A.	15	45	60	
	Total	248	392	640	
Age group	≤30	54	56	110	0.009
	31-40	79	101	180	
	41-50	66	124	190	
	51-60	39	81	120	
	>60	10	30	40	
	Total	248	392	640	
Knowledge of formal way of counseling	Yes	212	278	490	0.001
	No	36	124	150	
	Total	248	392	640	
Presence of assistant	Yes	157	233	390	0.329
	No	91	159	250	
	Total	248	392	640	

Patient Counseling activities

Fifty two (81.2%) of respondents greet and/or extend hand to patient before starting to talk to patient, Forty eight (75%) of dispensers do not make difference in counseling directly to the patient and counseling to care giver. Ten counseling activities were assessed in 64 of the dispensers. The maximum counseling

response given was eight and the minimum was one out of the ten counseling activities. There are a total of 640 responses, out of these, 248 (38.8%) of the responses shows as they give the counseling activities. Age and knowledge of the formal ways of counseling were having significant influence on counseling response ($P<0.05$), but educational qualification and presence of assistants were not having effect ($P= 0.329$) (Table 4, 5). The most frequent drug information that dispensers respond as they are giving always were, route, dose and frequency of administration of drugs. But most of the dispensers telling name of drug, storage condition and giving written materials either rarely or never (Table 6).

Table 6: Frequencies in which drug dispenser tell basic drug informations to patient, Jan 2009.

Information they give	Percent of respondents (n=64)				
	Always	often	Some times	Really	Never
Tell name of drug	_	_	15.6	35.9	48.4
Tell route of administration	96.9	3.1	_	_	_
Tell dose of drug	100	_	_	_	_
Tell frequency of administration	98.4	1.6	_	_	_
Tell why the drug is prescribed	4.7	12.5	28.1	40.6	14.1
Tell duration of therapy	9.4	18.8	59.4	12.5	_
Tell interactions	28.1	37.5	23.4	10.9	_
Give written materials	_	4.7	39.1	56.2	_
Tell storage condition	_	1.6	26.6	62.5	9.4

Table 7: Conditions in which dispensers give special attention or additional information during drug dispensing, Jan 2009.

	Special condition	Percentage of respondents (n=64)
Patient condition	Pregnant	82.8
	Visual/hearing problem	75.0
	Functionally illiterate	51.6
	Child/elder patient	73.4
	Taking multiple medicine	56.2
Disease conditions	Asthma	43.8
	Diabetic mellitus	81.2
	Epilepsy	84.4
	Hypertension	85.9
	Tuberculosis	76.6
Drug conditions	Under active surveillance by DACA	34.4
	Special storage condition	50.0
	With significant side effect	59.0
	With complicated direction	62.5
	With additional warning	43.8

DACA (Drug Administration and Control Authority of Ethiopia).

OTC drug Dispensing

Forty three (67.2%) of the respondents do not ask symptoms when they are asked for OTC drugs. All of them respond that they tell direction for use during OTC drug dispensing. Thirty three (51.6%) tell expected outcome of therapy while only 3(4.7%) and 2(3.1%) of the dispensers tell common adverse effect and correct storage respectively.

Dispensers concern to special conditions

From patient conditions 82.8% of the dispensers respond as they give special concern to pregnant women. Less concern (51.6%) was given to functional illiterate. From disease conditions, maximum response (85.9%) is given for hypertension. Out of drug conditions, dispensers give more concern for dispensing of drugs with complicated direction. Generally, dispensers give more concern for disease conditions and least concern for drug conditions while dispensing (Table 7).

Barriers to Patient Counseling

Lack of knowledge on drugs and updated drug information were the first factors that prohibit 43.8% dispersers from counseling their patients. High patient load, non legalization of counseling and patient factors (patients do not need much talk, patients have low attitude towards pharmacy) were also other barriers assessed (Table 8).

Table 8: Factors that prohibit dispensers from counseling patients on their medication among dispensers in North West Ethiopia, Jan 2009.

Barrier to counseling	No of Respondents (%)				Total
	Pharmacist	Druggist	Phar. T.	H. A.	
Lack of knowledge and updated drug information	4(33.3)	19(44.2)	2(66.7)	3(50)	28(43.8)
High patient load	2(16.7)	14(32.6)	3(100)	0	19(29.7)
Non legalization of counseling	5(41.7)	10(32.2)	0	1(16.7)	16(25)
Patient factors	4(33.3)	6(14)	0	2(33.3)	12(18.8)
No factor	0	2(4.6)	0	1(16.7)	03(4.7)
Total	12(100)	43(100)	3(100)	6(100)	64(100)

P=0.432. Phar. T (Pharmacy technician), H.A (health assistant)

DISCUSSION

Counseling at the point of delivery in the pharmacy is an area in which pharmacists can significantly improve medication safety and patient compliance (Michael, 2003, Paul, 2000, and Schommer and Wiederholt, 1995). Patient often, due to lack of information on medication usage fail to adhere to their medication. This leads to failure of achieving therapeutic goals and decrease quality of life (Adep et al 2004). Pharmacists must be very clear on what important duties they carry out on behalf of their patient. But if such activities are not appreciated, or even not understood by the potential users of such service, problems may be materialized (Epstein et al, 1984).

In this study, over 60% of dispensers respond that patient counseling is a shared responsibility of both pharmacy professionals and physicians. In a study conducted in India (Adep et al 2004), respondents from Karnataka stated that patient counseling is a shared responsibility of both doctors and pharmacists, where as respondents from Kerala mention that patient counseling is pharmacists' responsibility. This is also in agreement with the study conducted in Israel which showed that about 60% of the patients reported receiving no counseling regarding their new medication (Kerzaman, 2004). However, this is not in similar to other finding (Perri et al, 2004, and Mark,

2008), which is done in western countries with high educational qualifications. Countries like USA already developed a rule dictating the need to offer patient counseling and there is patient counseling legislation and this was introduced into pharmacy School curriculum (Perri et al, 2004) Educational qualification is the main factor that influences the response in the study like other study ((Adep et al 2004)). Over 65% of pharmacists take counseling as their responsibility in this study.

Persons involved in drug dispersing have to make themselves up-to-date with drug information in order to provide this information for patients, other health professionals and to the general public (Drug admistration and Control Authority of Ethiopia, 2007). Only 29.7% of the dispensers respond that they update their knowledge of drugs always which is similar with other studies (Dikasso et al, 1998 and Overall quality of drug related service in Ghana, 1993). This low frequency of knowledge updating may be due to, in Ethiopia, up-to-date drug information is not accessible to the majority (80%) of drug dispensers (Abula and Ashagrie, 2003).

Their main sources of drug information were inserted package leaflets (71.9%) and books (62.51%). This is not in accordance with WHO recommendations which do not recommend leaflets as source of drug information and promote use of drug information bulletins due to the fact that leaflets contain manipulated information about a particular drug as they are prepared by drug manufacturing companies and thus are subjected to bias (WHO; promoting rational use of medicines, 2003). High use of leaflets in this study may be due to lack of alternative information source.

Unlike study done in USA (Perri et al, 2004) presence of assistant for the dispensers was not having significant effect for counseling response (p=0.06). The reason is, Pharmacies were not having counseling rooms, both the dispenser and the assistant dispense without difference in their role. The role of assistants, according to dispensers, is to help them in dispensing and to dispense when they are out.

To improve efforts that assist patients in making informed decisions regarding medications, discussing side effects and management strategies with patient is crucial (WHO; promoting rational use of medicines, 2003). In this study only 18.8% of pharmacy professionals respond as they tell side effect of drugs similar to study conducted in Ghana (Overall quality of drug related service in Ghana, 1993). However, this is not in agreement with several other studies (Kerzaman, 2004, and Perri et al, 2004). The possible reasons are the absence of separate counseling room, which creates a better condition to tell more information to patients, training or regulation differences. In Ethiopia pharmacist-patient communication is through windows which limit degree of communication between them.

In this study, the most frequently told drug instructions were route (96.9%), dose (100%) and frequency of administration (98.4%). In relation to this, a research done on out patient counseling in four hospitals of Addis Ababa showed that, the most type of drug information desired by the patient as well as offered by pharmacists were frequency of administration (84% on average) and route of administration (56%) (Zewdie, 1999).

There is increasing use of non prescription medicines in the treatment of common ailments and the range of effective available drugs without medical prescription is also increasing. Here the role of the pharmacist is to ensure that all necessary information and advice is given to encourage safe and effective use of medicines (Karin, 2006). In USA, Florida, pharmacists fail to obtain much of the information deemed critical to assessment of the cases presented during OTC requisition. Only 5% of the pharmacists asked about the onset, frequency and duration of symptoms being presented (Schnipper, 2006). But in our study 32.8% of the dispensers respond as they ask symptoms before recommending OTC drugs. This may be due to; the USA study includes a thorough asking of each symptoms taking process. But in this study the dispensers were generally asked if they ask symptoms, which may be biased. But it can be concluded that, when OTC encounters are evaluated, pharmacy professionals are most frequently failing to ascertain important clinical information from patient.

Lack of knowledge and updated drug information, high patient load, Non legalization of counseling and patient factors were barriers to patient counseling in 43.8%, 29.7%, 25% and 18.8% of the dispensers respectively. In study conducted in India, barriers to counseling were also lack of knowledge, non legalization of patient counseling and doctor dispensing (Adep et al 2004). In anther study conducted in USA, busyness reduced the odds of any pharmacist talk, oral information given and assessment of understanding (Perri et al, 2004). Factors in this study are similar with others except patient factors that include patients do not need much talk with the pharmacy professionals. This may be due to less development of pharmacy practice in Ethiopia in which the community does not understand the need for drug information.

In conclusion, the dispensers give less counseling activities with the exception of information on dose, frequency and route of administration. Training should be given for dispensers on the formal ways of counseling and the information that must be included during counseling. Age and knowledge of the formal ways of counseling of dispensers was affecting patient medication counseling activities. During OTC dispensing, most of the dispensers do not ask symptoms and do not give the required informations and are limited on telling direction for use. Most of the dispensers are not accessible to up-to-date drug informations. Up dated drug information and trainings should be frequently given to professionals involved on dispensing.

REFERENCES

Abula T. and Ashagrie G. Assessment of drug utilization from prescribers and dispensers perspective in selected towns of Amhara region. Eth. J. of Health Development, 2003; 17(3):231-37.

Adep R, BG Nagari and Kumar BJ Mahendra. Patient counseling practicing community pharmacist perceptions from two south Indian stats, Indian Journal of pharmaceutical science 2004; 66(1). 44-48.

Beardsley R. Oral patient counseling by pharmacists; proceeding of the national symposium on oral counseling by pharmacist about prescription medicines, 1997; 19-21.

Bruce Berger; Effective patient counseling patient counseling check List http://www.USA pharmacist.com/old format. ESP? Uel= newyork /files/phar.

Dikasso D, Gobe Z. and Tekle Mariam j. A preliminary survey on drug dispensing patterns in some hospitals in southern nations, nationalities and people region of Ethiopia. Ethiop. Pharm J.1998; 16: 59-6.2

Drug Administration and control Authority of Ethiopia (DACA), promoting rational use of drugs; drug information bulletin, 2004; 2(1): 1-10

Drug admistration and Control Authority of Ethiopia. Manual for good dispensing practice, Feb. 2007: 1-27.

Epstein AM, Read JL and Winickoff R. Physicians beliefs, attitudes and prescribing behaviour for anti-inflammatory medicines. American Journal of Medicine1984; 77:313-318.

Johanna D. Pointier and Lawrence H. Mokhiber. Important information regarding medication error preventing and patient and patient counseling, practice alerts and guidelines, November 30, 2004.

Karin W., Rob S. and Clare A. Developing pharmacy practice; a focus on patient care. WHO/PSM/PAR. 2006:7-12.

Kerzaman Hanna, Nirakoren and Oran Baronspel. Assessment of patient knowledge about their long term therapy. European journal of nursing 2004; 5:4 311-316.

Kumud K. Farai C. and Suryawadi S. Role of dispensers in promoting rational drug use, ensuring good dispensing practice. Sep 1996; 11(3):1-21.

Mark MR. General pharmacy work explores in Netherlands, pharmacy world and science, faculty of business educate. University of August 2008; 4; 353-359

Melanic J. Pharmacists talking with patients. A Guide to patient counseling, 2nd edition, 2007; 68-72.

Michael. A. Jackson. Systematic Approach to prevent Medication errors, US pharmacist, 2003

Paul .L. Patient communication: In Alfonso R. et al Remington 20th ed; The science and Practice of Pharmacy, 2000; 2:1957- 1999

Perri M, Kotzan J, Pritchard L, et al. OBRA '90: the impact on pharmacists and patients. Am Pharm. 1995; NS35:24-28, 65.Bonnie L. Svarstad; Dara C. Bultman; Jeanine K. Mount. Patient Counseling Provided in Community Pharmacies: Effects of State Regulation, Pharmacist Age, and Busyness J Am Pharm Assoc. 2004; 44(1); 22-29.

SEAM. Overall quality of drug related service in Ghana. Ghana country assessment. 1993.

Schnipper J. Kirwin J. and Cotugno M. OTC counseling: evaluating of pharmacists as OTC consultants. Arch Intern Med. 2006; 166(5):565-71.

Schommer JC, Wiederholt JB. A field investigation of participant and environmental effects on pharmacist-patient communication in community pharmacies. Med Care. 1995;35:567-84.

WHO; promoting rational use of medicines. Core components. WHO policy perspective on medicines. Geneva; Sep 2002:1-6.

Zewdie D, Jorge Y. and Gebre Mariam T. A preliminary assessment of outpatient counseling in four referral Hospitals of Addis Ababa. Ethiop Pharm J. 1999; 17; 44-50